A PLUME BOOK

THE BAREFOOT RUNNING BOOK

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The Art and Science of Barefoot and Minimalist Shoe Running

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Contents

Acknowledgments

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On Barefoot Running

Why run barefoot? I'm such a believer after years of practice that I've written a book on it! But I'm not alone in my enthusiasm for the practice. The following stories come from members of the *Runner's World* Barefoot Running forum. Each has a different story to share; each has found barefoot running to be a wonderfully rewarding experience.

> "For me, barefoot running reintroduced a childhood-like joy that had been missing most of my life. There is little to compare with the feeling of the ground beneath your bare feet as you are quietly and softly running along. I feel more connected with nature and myself. And I've saved countless hundreds of dollars over the last decade on unnecessary shoes and socks! So I run barefoot for the pure

joy and fun of it. I can't even imagine running any other way anymore." —*Victor Palma*

"I have Morton's neuroma, a pre-running condition. It really started to bother me when I increased my mileage. One day I was out running a 10K distance with my hubby, who was pushing our boys in a double jogger, when around mile five, I began to feel a horrible searing, burning pain under the toes on my left foot. I was in so much pain, I thought I had fractured my toes. I stopped, sat down, took my shoes off, and started rubbing my toes. The pain went away immediately. I thought that was odd, so I decided to leave my shoes off and catch up to them. I finished that run feeling as though I was onto something. I found that running barefoot allows me to run much farther than I could shod. Looking back now, I think that run was by far the best I have ever had, not in terms of quality but of awareness of how important running is to me. I thank God for Morton's neuroma, for without it, I would never have discovered running barefoot." —*Tamara Gerken*

"Six months ago, I started running barefoot on hard surfaces. Prior to that, I ran for three years with running shoes. I started to get very bad pains in my knee, even when walking. I was starting to limp and couldn't walk up the stairs. I tried those worthless knee straps, which didn't work. I went to a sports medicine doctor. He indicated that because of relatively weak thigh muscles and a lack of proper foot support, my knees were becoming inflamed. (Odd, I have no support barefoot and the pain is gone.) He told me to relieve the pain by icing my knees immediately after running and to take an anti-inflammatory like ibuprofen or aspirin after running. The doctors like to treat the symptoms but not address the problem.

"One day, I did a search on Google. I typed in 'knee hurts while running' and found barefoot running sites, did the research, and it made sense. I started barefoot running, and the knee pain went away within one week. I haven't had any knee pain for six months now. I look forward to running. I never have to ice any joints, and I don't have to take aspirin. This weekend I ran a 5K.

"A woman asked me if it hurts to run barefoot. I told her, 'No. I started running barefoot to take away knee pain.' She replied that she doesn't get knee pain with shoes because she gets cortisone shots in the knee! I feel this is treating the symptom and not the problem. Barefoot running saves money! No running shoes, no sports medicine doctor fees or medicine!" —*Barefoot Larry Gibbons*

"I was 'born to wear orthotics and knee braces.' I used barefoot running to recover from a semiserious injury, and I've gotten faster after adapting a midfoot strike with minimal footwear. Before running, I was an overweight asthma patient with Osgood-Schlatter syndrome. I was told orthotics and heavy cushioning, along with knee braces, were essential to my health. I thought I would feel pain for the rest of my life and that running just wasn't for me. I would never be one of those 'naturally gifted' runners.

"I started running barefoot to improve my form, but it didn't take long for me to start thinking about ditching traditional running shoes altogether. Once I became familiar with myself and my form, my runs were no longer limited to the amount of pain I could withstand. Taking off big, clunky shoes has allowed my feet to teach me about my body and feel the signals that teach me how to run.

"My season has consisted of running several races and competing in several triathlons and has been a season of transition. I completed my first half-Ironman triathlon and

an off-road 50K race. The longer races were with shoes, but I have full confidence that I will be ready to repeat these performances, as well as a fifty-mile ultra, either barefoot or in minimalist footwear.

"Running barefoot, in my experience, has been completely absent of the typical symptoms involved with shod running. My leg muscles have not been sore, I have had no joint swelling, and my recovery has been overnight in the longest of cases." —*Jesse Scott*

Preface

The journey started with a crushed dream. It was a hot, sticky day in late July 2005. I was lying in a ditch, surrounded by dried mud. Tiny gnats floated above my head. The bristly grass poked at my skin. The sensation provided a brief reprieve from the pain shooting through my legs. Try as I might, I could not muster the strength to climb back to the road.

As I lay on my back, staring at the wispy clouds above, I realized that my dream of running a fifty-mile ultramarathon was going to remain just that—a dream.

Five months earlier, I had begun training for the race. This would be the toughest physical feat I had ever attempted. I was foolishly overconfident in my abilities, but why wouldn't I be? I had faced adversity before. I believed hard work coupled with unwavering determination would make this happen.

I was wrong. My body simply could not take the beating.

I had developed plantar fasciitis. I hobbled out of bed every morning. Each step was met with a searing pain that took hours to extinguish. I had developed shin splints. It felt as if my lower legs could snap at any time. It felt like I had a fractured pelvis. My kneecaps hurt so much, I had to walk backward down stairs.

Through all of that, I persevered. I trained when I could. I would miss days at a time in a feeble attempt to heal my broken body. My training schedule said I should be running thirty miles that day. I had made it to the twelve-mile mark when I swerved to avoid a semitruck. In my retreat to safety, I accidentally stepped on the loose gravel at the edge of a steep ditch. If I had been healthy, I would have simply adjusted my weight, but in my broken-down state, the best I could muster was a frantic waving of my arms. My barely functional legs could not respond fast enough and I tumbled down the embankment.

Oddly, the fall did not hurt. Or if it did, the pain from running with a broken body successfully masked it.

Eventually, I did muster the strength to drag myself out of that ditch. I took a few days off and then eased back into training. A month later, I ran a marathon. It wasn't the fifty-miler I had dreamed of. The race, while fun, was a hollow victory. I set out to research better training methods. I was looking for an answer, any answer. I *needed* to finish that fifty-mile race the following year. My research led me down many paths. I read about low-heart-rate training and Gallowalking. I read stories about low-mileage training and high-mileage training. I read about advances in shoe technologies, custom orthotics, and various braces and devices designed to support the broken parts of runners.

I also found an obscure article in an academic journal. The author made a case for barefoot running, with the simple hypothesis that running without shoes strengthens your feet

and forces you to run with good form. I was intrigued. It was the polar opposite of every other theory I had researched. For me, the selling point was simple: *I used to run barefoot*.

My first attempt at barefoot running had occurred in 1992, to prepare for high school wrestling. Microsoft's Windows 3.1 was all the rage, "Achy Breaky Heart" had forever ruined country music, and *Seinfeld* was teaching us about being "masters of our domain."

I would run with a good friend of mine, Jason Saint Amour. We had the idea of running barefoot on asphalt to "toughen our feet." We would also routinely run in wrestling shoes, my first experience with minimalist shoes. Our friends thought we were crazy. Who knew we were just really early adopters? Over the next thirteen years, I was a very sporadic recreational runner. I ran only to maintain fitness and a reasonable weight. My waistline was slowly expanding due to my love of beer, bacon, and gas station hot dogs.

In 2004, I met my wife, Shelly. She introduced me to the concept of regular exercise, which included several weekly runs totaling about ten to fifteen miles. I had always enjoyed running, but had never taken it seriously until then. I wore shoes for these runs. It was early in our relationship; I didn't want to scare her off by running barefoot.

Since I was now a runner, I needed formal running shoes. A local big-box sporting goods store had recently advertised a major shoe sale. When I arrived, a teenage salesperson named Duane helped me. He measured my feet. He gave me a few suggestions. I tried on a few pairs. My testing consisted of parading back and forth in front of Shelly and Duane. Two pairs were especially comfortable; the padding in both made it feel as if I were walking on marshmallows. I chose the more colorful of the two. It seemed like a good decision.

In 2005, Shelly and I decided to run a 15K road race. Running in shoes over longer distances felt strange, so I adopted

the technique I'd seen other runners using. They would land on their heel and roll their foot forward. It felt awkward, but it seemed to work. That particular race went well. I lost a lot of toenails and developed too many pains to count, but it was fun. The following day I committed to the fifty-mile race.

I spent the rest of that summer obsessively working toward my goal, but my body simply would not cooperate. Injuries started piling up immediately, so I began to skip one workout a week. I relied on ice baths to ease the pain after every run. (Ice baths that involve submerging anything above the thighs should be classified as torture. There are certain parts of our anatomy that were not designed to be submerged in forty-degree water.)

As my injuries mounted, a friend suggested I go to a local specialty running store for new shoes. Apparently, Duane hadn't been the expert I'd assumed. The salesperson at the running store seemed more knowledgeable than Duane. He had me dip my feet in water and stand on a piece of paper to measure my arches. It seemed they were "normal."

He had me walk on a treadmill (barefoot, mind you). He used a term I was only vaguely familiar with: *pronation*. I was a mild overpronator. He gave me what he described as the perfect pair of shoes. I explained my experiences with Duane. We shared a good chuckle about my naïveté—Duane clearly had not had the shoe-fitting expertise the running store could provide.

I went home and resumed training. I was confident my new, professionally fitted shoes would eliminate my debilitating injuries. I was wrong. The pains multiplied faster than the pet mice I'd left in my college dorm room over Christmas break (don't ever trust pet-store salespeople—ironically, a kid named Duane—when they claim your new pet mice are both females). That plunge into the ditch was my low point, both literally and figuratively. I never forgot the feeling of complete

and total failure, the stabbing pain of defeat, the emptiness of hopelessness. I wasn't capable of *anything*. I had *limitations*.

The following spring, those feelings led me to immerse myself in the world of barefoot running. There were few resources at the time. Ken Bob Saxton, Ted McDonald, and Rick Roeber had informative websites. Ken Bob ran a discussion group on Yahoo. There were a handful of academic papers. I drank in all I could. I experimented. I practiced. I challenged myself.

I would like to say those early days went well, but they did not. If I could travel back in time, I would slap myself. I made every single rookie mistake one can make. I ran too far before my body had properly strengthened. I started running on grass and sand. I ran on my toes without letting my heels touch the ground. I stuck with it, though. I continued to learn; I continued to refine.

In September of that year (2006) I finished the fifty-miler. I had accomplished the goal that had eluded me the previous year. Over the next few years, I continued to learn about barefoot running. I slowly mastered the craft. I started a website to share my experiences. I had no idea that simple, poorly designed website would lead me where it has.

In 2009, I was invited to join a barefoot running forum on the *Runner's World* website. This led to many discussions with both novice and experienced barefoot runners. I realized that I had a lot of information to share. I was a teacher by trade, so my instinct was to spread the knowledge. I started a series of barefoot running clinics. To supplement the clinics, I started writing brief essays on various topics related to barefoot running. At some point, people started asking for copies. Someone suggested that I print them in book form. It was the humble beginnings of this book.

Whenever we hold a clinic, I get nearly as many questions about my family's lifestyle as I do about barefoot running.

Since the summer of 2011, Shelly and I have been traveling around the United States with our niece Stephanie and our three children. Most of our time is spent attending running events, running races, and holding barefoot running clinics. The rest is spent exploring national monuments, mountain trails, and new restaurants, and meeting new friends. We're essentially homeless barefoot running hobos.

So how did we make this happen? It was easier than we'd expected.

We sat down and examined what we wanted to accomplish in life. We decided we wanted to travel, run, simplify our lives by eliminating excessive material possessions, and expose our children to a wide variety of experiences.

After thinking about it, we determined we could best accomplish that goal by leaving our jobs, buying an RV, and traveling the countryside teaching others about good running form.

We needed to pay off debt so we could live on less income. It also required us to give away the vast majority of our material possessions, prepare to "road school" our children, and develop several income streams that were location independent. This stage took approximately eight months, but our persistence paid off.

We live the life we want to live, on our own terms. All too often, we get caught up in the expectations of others. We get trapped into spending too much time working to buy stuff we don't have time to use. If we were able to create the lives we wanted to live, so can you! I hope you'll find our decision to make this radical change inspiring. If we can change our lives, surely you can change your footwear!

Since the fall of 2009, this book has been revised and refined. Information has been added; concepts honed. The book you hold in your hands is the culmination of my own experi-

ences, the input of hundreds of barefoot runners, a thorough examination of the current research, the application of various theories, and a touch of my own special brand of teaching (i.e., bad humor). I have even solicited the ideas of barefoot running skeptics. This learning process has helped me forge a set of easy-to-understand practical ideas free of the dogma that sometimes accompanies discussions of barefoot running.

After the first edition appeared in 2010, I continued to refine my own teaching methods. I have used the knowledge to run many races barefoot or in minimalist shoes, including several hundred-mile runs. I have continued to share my thoughts and experiences on my website, Barefoot Running University. I have also started sharing my knowledge with shoe companies as a barefoot running consultant. All of these experiences have led Shelly and me to simplify our lives, quit our jobs as high school teachers, move our niece and three children into an RV, and travel the world teaching others about barefoot running. I rely on all of these experiences to give you the very best information possible.

How to Use This Book

This book will teach you how to run barefoot. It is simple, direct, and easy to understand. You won't find wild claims that barefoot running will turn you into an Olympic-caliber athlete or that it is free of potential risks. I do not fill the pages with needless fluff. (Well, okay, there's *some* fluff. I include my 2009 Hallucination 100 Mile race report. It was the first hundred-miler I finished, as well as the culmination of my barefoot running efforts and a testament to the information contained in this book.) What you will find in these pages is a straightforward guide to barefoot running that begins with

the fundamentals and adds layers of complexity based on mastery of the basics.

I am just an ordinary guy of questionable athletic ability. Barefoot and minimalist-shoe running have allowed me to do things I never thought possible. If I can finish a hundred-mile race, you can accomplish your running goals, too. My goal is to teach you in the safest, most efficient way and hopefully inspire *you* to accomplish extraordinary things.

Good luck on your journey!

JASON ROBILLARD

THE BAREFOOT RUNNING BOOK

1

The First Steps

Why Barefoot Running?

People run barefoot for a variety of reasons. I started because of injuries. When I ran a 15K, a trail marathon, and a road marathon in traditional running shoes, I suffered blackened toenails, plantar fasciitis, chronically sore knees and hips, reoccurring lower back pain, and shin splints. It was as if I had aged twenty years! After doing some research, I decided to try barefoot running once a week. I fell in love with it and abandoned the old shoes within a week. Other reasons I've heard for giving it a try include the desire to:

- find a way to make running fun
- strengthen one's feet
- reduce injuries
- capture the inspiration of books such as *Born to Run*, by Christopher McDougall

- relive memories of childhood
- get rid of sweaty, smelly socks and shoes
- find a new challenge for longtime runners
- run in a more natural way
- simplify one's life
- rebel against society

The lessons learned from barefoot running can be applied to any physical activity. The principles will help you move in a more natural way, which improves performance in any sport. People have used these ideas in sports such as basketball, soccer, and hiking. The principles can even be applied to your work. Stand on your feet all day? Using a quality minimalist shoe with minimal cushioning and a flat sole can realign your posture, which will eliminate painful feet, knees, hips, and back.

Remember: You should be in good health before beginning barefoot running or any physical activity.

WORDS OF ENCOURAGEMENT FROM SOME BAREFOOT RUNNERS

"When learning to run barefoot, go *bare*foot, and listen to your bare soles—don't do more than your soles are ready for. Don't put strain or stress on your feet that is uncomfortable or painful, either to the soles or to the foot. Don't work too hard.

"Running should be easy and comfortable, especially while barefoot. Avoiding movements, pressures, etc., that cause pain and discomfort or seem like work will teach people to run gently, smoothly, and efficiently, and have fun!"

Ken Bob Saxton
barefootkenbob.com
therunningbarefoot.com

"There are several reasons why I began running barefoot, and even more why I continue. When I began in October 2003, I was fascinated by the idea that one could run without shoes. I have always loved going barefoot, so this seemed very logical to me. I read up on barefoot running and discovered that barefoot runners experience far fewer injuries because of the ball/heel foot strike. Shoe companies have always built the heels up too much on their products—even running shoes. The result is heel striking, which can cause knee and leg problems. Since I started running barefoot, I have not experienced an injury to my knees or legs. That was not true when I wore shoes. I experienced a stress fracture in the tibial plateau of my left knee and severe clicking in my right knee. Since running barefoot, I have no reoccurrences of problems associated with former injuries.

"Here are a few reasons why I continue to run barefoot:

1. I am injury-free due to proper foot strike.
2. It feels great!
3. I no longer have to support the running shoe companies.
4. I always have my running "shoes" with me.
5. It creates new challenges when running marathons (after eighteen shod marathons, I was looking for a new challenge).
6. I believe it is the way we were created to run."

Barefoot Rick Roeber
barefootrunner.org

"Our ancestors moved over the earth and found their way into nearly every nook and cranny of the planet with their bare or minimally clad feet. The foot has been the primary vehicle of our success as a species, allowing us to fulfill our desire to explore, discover, achieve, and eat. Yet most people these days have

come to see their feet as broken appendages, unfit for the real world, sickly and weak, prone to injury, in need of support and padding, doomed to suffer. Why?

"Good question. What did happen? What made our feet sick? Did we devolve? Perhaps it has something to do with the shoes we wear.

"Well, arguably, we are the first generation of runners who have worked with the hypothesis that more cushioning and support equals safer running and reduced impact. We have concluded that running on modern surfaces, hard and unforgiving, requires ever-thickening sole padding to help counter the shocks of landing, but is that true?

"It is counterintuitive, but the truth is—and studies back this up—the more you block out the feeling of impact in your feet, the more impact you are likely to put into your body at the wrong time in your stride, by moving and landing differently than you would if you actually felt what you were doing.

"All those nerves in the bottoms of your feet have a purpose after all. Preventing them from sensing seems to be a bad idea, and this dulling of sensation seems to set in motion a series of unfortunate events that ultimately lead to movement patterns unknown to our preeminently capable ancestors—*patterns that seem to lead to inefficient movement and injury.*

"By taking off your shoes, you give your body a chance to reuse some amazingly useful built-in systems that help you move in a way that need not be jarring or pounding, regardless of the hardness of the terrain. It is a way of movement that more effectively captures and releases stored energy through elasticity in the body: the splaying of the forefoot; the arch in the foot; tendons in the lower legs, calves, and quads; all positioned ideally to absorb and recoil the energy of movement smoothly and efficiently, operating in real time, on the move, a kind of primordial physical

intelligence, the birthright of *Homo sapiens*. This built-in recoil system puts to shame the claims of the marshmallow-soft, spring-loaded shoes that capture the imagination of so many.

"So, what went wrong?

"My hunch is that we got unplugged, detached, from our own bodies, from our own feet. That disconnect has led to gait patterns and running styles that are unique to a generation of runners: We are the first cohort in the history of the world to run distance with cushioned, high-heeled shoes. I think it is a case of the cure becoming worse than the ailment—the ailment being hard surfaces and tired bodies trying to continue moving when the safe form of moving has exhausted itself and the feet and legs would normally protest about continuing, unless you could give them a little relief, i.e., block pain brought on by less-than-best landing patterns, which end up being a fundamental change in running form and, in my opinion, a dying branch of cultural evolutionary experimentation.

"Does it have to be this way?

"Nope. Learning how to master the fundamental human capacity of running sans shoes is a lot easier than you think, and it does not require a purchase. Simply take off your shoes and start listening to your feet, listening to your body, moving without internal hard edges, with flow. Focus on incrementally redeveloping your feet and lower legs one step at a time, giving them a chance to feel the world and grow from interacting with it, learning from it. And become a student of your own body and of movement, share your experiences, learn and be inspired by others. Crack the nut of joyful movement in your own body, your own unique vehicle. The resources are now available, unlike at any other time for our generation. Google it.

"The paradigm shift away from the overengineered shoe is connected with other shifts in thinking about our bodies and

being human. In your bare feet you are more connected to your body, better balanced, more aware, mindful, present. Those characteristics are good qualities to mimic in your mental life.

"Becoming healthy in mind and body is an incredibly effective way to experience happiness, it seems, and all my research into this topic leads me to feel confident that if you follow these insights to their logical conclusion, you, too, will become a happy, healthy, and free-thinking individual, comfortable and satisfied with the awesome inheritance your feet and body represent."

Barefoot Ted McDonald
barefootted.com

The Relationship Between Athletic Shoes and Foot Injury

Barefoot running has experienced a resurgence in popularity over the past few years. Part of this resurgence is the result of interesting research that gives tantalizing hints about the nature of running injuries.

Most runners assume the running shoes they use are designed to prevent injuries, but as researchers explore the relationship between injuries and footwear, some interesting connections appear. Dr. B. Marti (1989) published one of the first studies that seemed to link shoe properties with injuries. He tested more than five thousand runners who had finished a race. He found that those who ran in expensive shoes (costing more than $95) were more than twice as likely to have been injured in the past year than those who ran in cheaper shoes (costing less than $40). Who knew the plastic trainers from

Walmart would be better than the latest $200 shoes on display in the window of your local running store?

Around the same time, Joseph Hamill and Barry Bates (1988) published a study that seemed to show that shoes improved as they wore out. Like a fine wine, they got better with age. As the cushioning and motion-control aspects broke down, the foot was allowed to function more naturally.

These two studies seem to indicate that the best shoes are those that are old, worn out, and cheap. It is no coincidence that the rate of running injuries was significantly lower prior to the advent of the modern running shoe (Froncioni 2006). Running in thin-soled Converse All Stars was healthier than running in today's shoes!

These studies in particular interest me because they hint at the possibility that shoes get better as they become more "minimal." Most shoe manufacturers recommend replacing shoes every 250 to 300 miles because the materials degrade with use. The idea of planned obsolescence is not new. Products that are designed to wear out in a certain time require the consumer to buy a new version. I have applied the same concept to the manufacturing of this book. There is a tiny microprocessor embedded in the cover art. When the entire book is read, the microprocessor triggers the release of a chemical that causes the paper to safely biodegrade. If you had hopes of reading this book twice, you will have to purchase another book.

Sounds silly in that context, doesn't it?

Other significant research seems to support the claim that shoes may be damaging. Samuel Shulman (1949) was a pioneer in investigating the potential perils of shoes. He found a dramatic decrease in foot deformities in children who had not worn shoes as small children. Steele Stewart (1972) confirmed this finding by comparing shod and unshod populations. Steven Robbins and colleagues (1987, 1988, 1990, 1993, and 1995) have conducted a series of experiments to empirically measure

various characteristics of running in shoes versus barefoot. Among their many findings is the discovery that wearing shoes decreases a runner's ability to judge impact. As such, shod runners produce far greater impact forces when running, which is believed to be a major factor in the development of running injuries. To witness this concept for yourself, just listen to the runners on treadmills at your local gym.

Craig Richards, Parker Magin, and Robin Callister (2008) have done a thorough search of the existing literature to find some research that supports prescribing shoes with elevated, cushioned heels and pronation control systems. It is not a surprise that their search has yielded no results. Let that sink in for a moment. They did not find a single peer-reviewed study that supported the use of modern running shoes. None. Nada. There is as much research supporting the use of modern running shoes as there is supporting the existence of unicorns, Sasquatch, and funny Pauly Shore movies!

Critics of barefoot running will often point out that most podiatrists and other such doctors recommend corrective shoes and orthotics as a means of preventing and treating running injuries. While I do not recommend ignoring the advice of your doctor, it is prudent to exercise some skepticism when dealing with anything in life. We tend to blindly trust medical professionals without considering the possibility that their opinions may be wrong.

I had an interesting conversation with Dr. Joseph Froncioni, an orthopedic surgeon and blogger, recently. He compared the medical community's belief in the therapeutic necessity of shoes to the past belief that baby formula was superior to breast milk.

In an attempt to sell more baby formula, manufacturers aggressively marketed their product in the 1950s. They created a market by convincing the public that formula was a necessity. They further validated this message by distributing formula

to hospitals to dispense to patients, which created a perception that formula use was supported by the medical community (Baer 1982). Indeed, many within the medical community did recommend baby formula. The result was a huge increase in formula sales and a corresponding sharp decline in breast-feeding.

Research conducted in the 1980s confirmed that the previous assertions were not only incorrect but potentially dangerous. Research has shown breast milk is vastly superior to baby formula. Need confirmation? Read the label of baby formula. By law, because of their past history of shady marketing, manufacturers must make a statement about breast milk being recommended or superior.

How does this relate to running shoes? Through clever marketing, the running shoe industry has convinced the general public that highly cushioned, supportive shoes are *necessary* to allow humans to run. Just like with the baby formula fiasco, the medical community has allowed marketing to influence their opinions.

Does this mean shoe companies are evil entities bent on producing legions of injured runners? No. Shoe companies produce shoes that are stylish and will create profits. They meet consumer demand. For years, this meant producing shoes that looked good and sold well. Since there was high consumer demand for cushioned shoes with built-up heels, this is what was manufactured and sold. We are beginning to see a gradual shift in shoe design. As more convincing biomechanical research is conducted and consumers begin demanding more minimal shoes, the shoe manufacturers are responding with more minimal offerings.

There are researchers, such as Dr. Daniel Lieberman and Dr. Irene Davis, both of Harvard University, investigating injury rates of barefoot versus shod runners. While this research is ongoing, the current peer-reviewed empirical data supports the adaptation of minimalist shoes and/or barefoot

running to help improve form and reduce the incidence of injury. This book was written to help you make that transition safely and effectively.

Terminology

The term *barefoot running* is sometimes misused. People may be running in minimalist "barefoot" shoes but refer to themselves as barefoot runners. Within the barefoot running community, *barefoot running* refers to running without any sort of shoe, sock, tape, or other foot covering. *Minimalist shoe running* or *barefoot shoe running* describes running with a shoe that provides little or no support, has a very thin, extremely flexible heel, and more or less allows the foot to operate in a natural way. *Reduced shoe running* is used to describe running in shoes that have some support, a thicker sole, and a heel that may be slightly higher than the midfoot area. Finally, *shod running* refers to running in traditional running shoes that contain thick soles, have lots of cushioning, and may provide a good deal of support for the foot and ankle.

The Barefoot Running Movement

The barefoot and minimalist shoe movement can be divided into various categories or factions. These divisions are predominantly based on perspective and theoretical differences. It is common for barefoot and minimalist shoe runners to shift from one group to another based on their own experiences or conditions.

The "barefoot purist" group: This group of barefoot runners runs exclusively barefoot. They shun shoes whenever possible. The purists will even shun minimalist shoes. The theory

is based on the idea that any shoe will interfere with the body's ability to run effectively.

The "shoes as tools" group: This group has the same theoretical perspective as the purists, but will accept the use of minimalist shoes when conditions such as extreme weather or unfriendly terrain warrant.

The "minimalist shoe" group: This group generally agrees with the benefits of barefoot running but will rarely run barefoot. They will do the majority of their running in minimalist shoes. Members of this group usually reject the importance of sensory feedback from the soles of the feet as a critical element of developing good running form.

These groups all identify themselves as barefoot runners. While they sometimes disagree, it is important to recognize that all three have the common goal of helping people run in a more efficient manner with fewer injuries by improving running form.

Is Barefoot Running a Fad?

Until very recently, barefoot running was an obscure practice followed only by a tiny group of dedicated individuals. We were labeled "crazy hippies" by our running brethren. Several events have helped to change this.

First, the peer-reviewed research began to make headlines as it became increasingly clear that the modern running shoe was not meeting the needs of all runners and that the advances in shoe "technology" may have a negative impact on runners' health. This has led many members of the medical and running communities to question the logic of the modern running shoe.

The second major event was the release of *Born to Run*, by Christopher McDougall. In this fascinating book, McDougall presents a convincing argument in support of minimalist

shoes and barefoot running. The popularity of the book has spawned an enthusiasm surrounding the idea that there is a right way to run.

Third, shoe manufacturers are beginning to understand the value of a shoe that allows for biomechanically correct movement. As consumers, we like to assume shoe companies design shoes utilizing sound principles and the latest scientific discoveries. In reality, almost all athletic shoe development over the past few decades has been motivated by style. Shoe manufacturers have been designing shoes that look good on the shoe store wall. The growing consumer demand for good minimalist shoes has changed the design principles and forced shoe manufacturers to look at the science behind movement, which is fueling the focus on good form.

Personally, I do not believe this movement is a fad. Leg warmers were a fad. River dancing was a fad. Barefoot running is a paradigm shift that will ultimately change the way we think about shoes. I do not think barefoot running will ever surpass the popularity of shod running. However, I do believe this movement will pressure shoe manufacturers to examine the research critically and influence the development of their current shoes. I believe there will be a slow movement away from the supportive and cushioned technology so prevalent today and toward shoes that allow your body to work the way it was designed. I also believe the barefoot running movement will help runners understand that running form, or *how* they run, is important.

There will be some people who run barefoot most of the time. The fun factor alone will ensure that. The majority of runners will opt for the more conservative approach and switch to minimalist shoes while still running with better form. Barefoot running is a movement that will eventually help all of us become healthier runners.

There will always be some skeptics who question the logic of the barefoot/minimalist movement. Many runners have no

history of injury using cushioned, supportive shoes. Those runners should continue running as they have previously. If you are one of them, occasional barefoot running may be a healthy supplement to your normal training routine.

Personally, I believe the true benefits of barefoot running are the result of a more conservative training plan coupled with improved form. When beginning barefoot running, most runners will start at very low mileage and gradually build to longer and faster distances. This helps them prevent "too much too soon" or overuse injuries. Barefoot running requires good form, so the better your form, the less stress on your body, and the fewer injuries you will likely experience.

Unless you are interested in barefoot running solely for the enjoyment factor, there is no need to completely abandon your shoes. You will get some benefits of barefoot running even from a single unshod mile each week. If you are one of these runners, read through the book. There are various sections that will be useful to you, even if you decide to forgo barefoot or minimalist shoe running.

Do I Actually Have to Run Barefoot?

While I would recommend barefoot running for all runners, it is not necessary to run barefoot full-time. In fact, running in minimalist or even reduced running shoes will produce many of the same benefits of barefoot running. Research is still being conducted to determine what, exactly, makes barefoot running so beneficial, but many speculate the relaxed, balanced gait is primarily responsible for its positive effects.

Based on anecdotal evidence, minimalist shoes are a much healthier alternative to traditional cushioned motion-control running shoes. In essence, minimalist shoes help the foot work as it was intended to work; therefore, a more minimalistic shoe

design is of greater benefit to the runner. If you do not intend to run barefoot full-time and prefer to utilize minimalist shoes, this book can still help you become a better runner.

I recommend all runners learn to run barefoot prior to adding minimalist shoes into your training routine. Learning to run barefoot first will allow you to learn good form and strengthen your feet, legs, and other anatomy to help prevent injuries. It is possible to learn to run in minimalist shoes first, but the lack of tactile sensation with the ground will interfere with the process. Being able to feel the ground is a valuable, though not necessary, training tool.


Running through a flooded trail

There are other excellent methods for learning to run with efficiency. Good Form Running, Evolution Running, ChiRunning, and the Pose Method are four such techniques. All four use slightly different approaches to teach very similar skills. After you learn good form through barefoot running, it can be beneficial to study each of these four methods. Each one contains drills and exercises that you can use for experimentation. My current running form is a hybrid of my own experimentation and elements from each of these four practices.

Can I Still Maintain My High Mileage and Learn to Run Barefoot on the Side?

The best way to learn barefoot running is to start from scratch. However, experienced runners often have difficulty stopping their high-mileage training. This is understandable; we do have

an addictive hobby. If you are currently training and are unwilling to restart from zero mileage, there is a solution. However, this solution does present some potential risks and common problems.

If you do wish to continue your normal shod training, I would recommend adding all drills and running barefoot in place of some of your current cross-training or running activities. For example, if you currently run fifty miles per week, run three miles barefoot and forty-seven miles shod instead of doing fifty miles. Slowly replace your shod miles with barefoot miles. If running in minimalist shoes is your goal, it is best to learn barefoot running first and then switch to minimalist shoes. Once you learn proper barefoot form, you can exchange the barefoot mileage for minimalist shoe mileage.

The most common problem that arises with this plan occurs after you start to develop good barefoot form. It will become increasingly difficult to run in traditional shoes. Your feet will feel incredibly heavy, and the rest of your body will rebel against the pounding. You will start to crave the gentle smoothness of barefoot or minimalist shoe running. This usually happens well before you are ready to convert all of your training mileage to barefoot or minimalist shoe mileage. The result is usually a temporary decrease in training mileage as you abandon your traditional shoes. You will quickly regain the mileage, but that reduction in training can be stressful for some. There are other activities that can be done as a substitute, such as weight training, swimming, or competitive break dancing.

Minimalist Shoe Recommendations

Sometimes people will ask for a minimalist shoe recommendation. It is difficult to recommend one particular shoe,

because each individual will have different tastes. I have a strong preference for shoes that allow my feet to operate as if I were barefoot. There are a few important qualities every minimalist shoe must have:

- *Flat, thin, flexible sole.* This is the most important aspect of any minimalist shoe. The heel must be the same thickness as the forefoot area. We call this a "zero-drop" shoe. A raised heel will alter your posture, making it nearly impossible to run as if you were barefoot. The thin sole allows for greater "ground feel," or the ability of the tactile sensory cells in the soles of your feet to feel the terrain underfoot. The flexible sole allows the foot to move more or less unencumbered.
- *Wide toe box.* This allows the toes to splay, or spread out, when your foot touches the ground. This physical sensation is part of a complex neural reflex that facilitates good running form.
- *Lightweight, flexible upper.* Of the three minimalist shoe qualities, this is least important. Oddly, most traditional shoe manufacturers seem to place more importance on this feature than on the toe box and the sole. Still, a light-

Typical running shoe cut in half. Note the extreme difference between thickness of heel and forefoot. Also note high arch support. Neither is good.

Terra Plana VivoBarefoot Evo cut in half. Note the heel and forefoot are the same height. Both are good qualities in minimalist shoes.

weight, flexible upper will allow the shoe to move with your foot.

In the near future, I predict the market will be flooded with minimalist shoe options from all major shoe manufacturers. This competition for the minimalist shoe market should produce some excellent shoes that complement the current offerings.

Minimalist shoes can be purchased at many local running stores. Most manufacturers have a store locator on their website. Minimalist shoes are also available online. My favorite stores are ZombieRunner, in Palo Alto, Calif. (zombierunner.com), Gazelle Sports, in Grand Rapids, Mich. (gazellesports.com), Two Rivers Treads, in Shepherdstown, W. Va. (trtreads.org), and Good for the Soles, in Northampton, Mass. (goodforthesoles.com).

PLASTI-SOCKS: THE MINIMALIST SHOE ALTERNATIVE

Disappointed that all the new minimalist footwear seemed to be moving further away from providing ground feedback, I decided to make my own. I had been looking for a way to reinforce the bottom of a sock, when I found someone online who had done just that, with an aerosol spray can of something called Plasti Dip.

With a trip to the hardware store and a little experimentation, I easily made a nice pair of running socks with a thin, rubberized sole. When the sole wears thin, it can easily be reinforced. I've been running barefoot lately, but I'm contemplating what might be this winter . . . wool plasti-socks?

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Guiding Principles

The following are the principles that guide my philosophy regarding barefoot running. These principles have been developed over time based on my personal experiences, studying the available research, observing other runners, and discussing barefoot running with peers.

There Is No Single Right Answer

Barefoot running is inherently a very individualistic activity. Each of us will develop our own style and form. There is no single "correct" way to run barefoot. Some prepackaged techniques, such as ChiRunning, Good Form Running, Evolution Running, and the Pose Method, can be very effective for learning minimalist shoe or barefoot running. However, all these methods take an "our way is the right way" approach, and this simply is not the case. Any of these approaches may work for the majority of runners who adopt them, but none is the single best method for *all* runners. My job as a teacher of barefoot running is to help you find *your own* style.

Vibram FiveFingers

You Must Experiment and Learn from Your Successes and Failures

In order to master the art of running barefoot, you must be willing to try new things. You must be able to adopt the successes and discard the failures. I've used this concept to develop

some truly unorthodox running habits, such as eating hot dogs, Ben & Jerry's ice cream, and alcohol-based iskiate as race fuel; wearing cotton hoodies instead of the latest moisture-wicking fabrics; and actively seeking out rugged terrain to practice barefoot trail running skills.

Your Body Is Your Best Teacher

Your best feedback will be from your own body. Your brain has the amazing ability to receive feedback from your body, interpret that information, and adjust accordingly. Our thought processes often create a roadblock for this feedback loop. We must learn to trust what our own bodies can tell us. *Feel, don't think.* If you feel a shock with each step, you have to modify your form until the shock disappears. Your body is the most efficient running coach you can employ.

Patience Is Mandatory

Learning to run barefoot takes time. Allowing your body to adapt to this new running style can be a slow journey. All too often we want to rush the process, which results in injury. You have likely spent a majority of your life wearing heavy shoes with raised heels. Like a broken arm that spends weeks in a cast, your feet will have grown weak. It takes time to build strength. You must be willing to start from nothing and rebuild yourself as a stronger runner.

Relaxation Is the Secret to Great Form

Barefoot running requires relaxation of the skeletal muscles. Running free and easy is the secret to running injury-free. Your arms and legs should have about as much tension as a wet

noodle. For my foodie readers, think well-cooked noodles, not al dente.

You Must Enjoy the Process

Learning to run barefoot should be a process, not a destination. If you take the time to enjoy each stage of your development as a barefoot runner, you will be successful. This is a fun activity! Watch little children run around barefoot—they know something most of us have long since forgotten. Embrace that joy! Smile and savor the process!

Making the Transition

When learning to run barefoot, several factors will affect how quickly you can make the transition from traditional shoes to barefoot or minimalist shoes. The most important factor is usually prior barefoot experience. Runners who routinely do other activities barefoot, such as yoga or gardening, will be able to advance at a faster rate. Their muscles, tendons, ligaments, bones, and plantar skin will be more adept at handling the stresses and rigors of barefoot running.

Runners who have adopted a midfoot strike will also be able to advance faster. This particular running style is nearly identical to barefoot form. Like individuals who spend time barefoot, this group will have already pre-strengthened many of the anatomical features that are stressed when running barefoot.

Youth may play a role, as younger runners are able to heal at a faster rate and thus make swifter progress.

Prior injury history also plays a role. Runners with few injuries may be able to advance at a faster rate.

A runner's ability to listen to his or her body will make a difference as well. A key to learning good form is the ability to monitor the state of your body.

Finally, trail runners may be able to transition faster due to their already developed skills of running on uneven surfaces and monitoring the terrain they are running.

Regardless of your own characteristics, it is important to exercise patience. You will learn to run barefoot significantly faster if you utilize a "slow and steady" approach.

Feel Instead of Think

It is impossible to give a detailed explanation of perfect barefoot running form. Every barefoot runner will have a slightly different form that works best for his or her individual characteristics. Because of this, I will teach the basic components all barefoot runners have in common. It will be your responsibility to experiment to find out exactly what works best for you.

Luckily, this is a relatively easy task. All you have to do is listen to your body. The soles of your feet are the best teachers you have. They will transfer critical information to your brain. In turn, your brain will send a signal to your muscles to provide the smoothest, most efficient gait possible.

It is important to be able to feel and react to what you are experiencing. Thinking about the tiny details of your form tends to short-circuit this process. Because of this, I prefer to avoid explaining many details that must be remembered and processed while running. Instead, I will give you one or two concepts at a time, then give you the drills to practice those concepts. My goal is to teach you proper barefoot form in the most time-efficient way possible.

LISTEN TO YOUR BODY

It will tell you when you should slow down and when you're ready to speed up. It will tell you when you need to step lighter and when you can plow through some terrain. It will tell you when you are ready to increase your cadence and when you need to slow it down. It will tell you when you can go out and run again and when you need a little more time to recover from the last run. Learning to listen to your body is crucial in barefoot/minimalist running, and experience will help in interpreting the messages.

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Before You Start

Before You Run, You Walk

Learning to run barefoot or in minimalist shoes will put unusual stress on your body. Because you've been wearing traditional shoes for years, your lower anatomy is weak and unprepared to handle the workload of functioning in the way in which it was designed.

Your muscles have atrophied and weakened from lack of use. Because of this developed weakness, it takes some time to strengthen your body to prepare to run in a different way.

Also, other physiological adaptations must occur. The soles of your feet must adjust to the newfound freedom of feeling the ground underfoot. Your brain has to reacquaint itself with interpreting the information being sent from sensory neurons in your feet. You have to develop some degree of foot-eye coordination and the habit of scanning the terrain you are walking or running through.

All too often, wearing shoes gives us a false sense of security. Thick shoes allow us to completely ignore everything surrounding our feet. It takes time to reawaken that spatial awareness. New barefoot runners often ask how to avoid stepping on broken beer bottles, hypodermic needles, or feces. Easy—watch where you are going! Better yet, stop running around fraternity houses. This introductory stage will help you adapt to new bodily stresses and develop the skills needed to navigate your environment.

You may be tempted to jump into the actual running. Even if you believe you already have the skills necessary to skip this stage, I would highly recommend you spend at least a week or two contemplating the concepts and practicing the drills. It will better prepare you to progress through the more advanced stages.

You will be ready to advance to the next stage once you reach the following goals:

- Walk in place barefoot for five minutes without pain either during or after the activity.
- Feel comfortable with the sensation of lifting your feet off the ground versus "pushing off."
- Feel comfortable with your ability to completely relax your arms and legs.

Spend Time Barefoot

Spending your days barefoot is an excellent way to begin training your brain and the rest of your body. I never wear shoes when I'm home. Even in the winter, I walk around barefoot indoors. I try to be barefoot as much as possible when outdoors, too.

If your house contains a variety of different surfaces—rugs, hardwood floors, tile—this will help teach your brain to discriminate among small variations underfoot. When moving

around your house, pay close attention to the feeling of the different surfaces. Being aware of the tactile sensations in your feet will be a critically important skill once you begin more rigorous activities.

My fellow Society for Barefoot Living (barefooters.org) members spend the vast majority of their time barefoot. This group advocates for the acceptance of a barefoot lifestyle by challenging business policies. Most people assume there are health department regulations that require shoes to be worn in businesses. Actually, there are no states that have such laws. A handful of municipalities do, but they are very rare. It's also perfectly legal to drive barefoot. Double-check your local laws before pressing the issue.

TIPS ON BAREFOOTING

- I think barefooting is about more than just being barefoot. It can signify a shift in your perception of the world. As you learn how wonderful it is for your feet to discover the ground you realize that all you've been taught about shoes might just be wrong. In life it is important to remember that just because everyone else is doing something one way, it may not be the best way.
- Start slow, and give your feet time to adjust. It takes months to build up additional padding in your feet and for the muscles in your feet to adjust.
- Remember that everyone is different. Your history and biology as well as your current level of fitness all combine to make your situation unique.
- Walk barefoot in the rain—it feels wonderful!

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Minimalist Shoe or Barefoot?

It is common for new barefoot runners to want to "ease into" the practice by using a minimalist shoe (Vibram FiveFingers, Terra Plana Evo, Feelmax shoes, cross-country racing flats, huarache sandals, etc.). However, as I've already mentioned, it is better to learn the proper form of barefoot running first and then use minimalist shoes as needed.

If you begin by wearing minimalist shoes, you are muting your best source of feedback—the soles of your feet. Starting by learning to run barefoot first generally speeds the transition. You will learn good form faster, strengthen your feet faster, and ultimately be able to reach your goals faster.

It is critical that your brain receive accurate sensory feedback from the rest of your body. This is especially true of your feet. The soles of your feet will tell you if you are overstriding, running too fast, or creating too much friction. If you cover your feet even with a minimalist shoe such as the Vibrams, you will short-circuit that neural pathway.

Shoes have one more distinct disadvantage: The more we place between our soles and the ground, the more force we generate when our feet touch the ground. This appears to be entirely involuntary, and most runners are not aware of the difference, but by beginning your training completely barefoot, you will teach your body how to run with less force upon hitting the ground.

ADVANTAGES OF BAREFOOT RUNNING

You have never truly experienced running until you have gone on a barefoot run and felt the ground beneath your feet. The tens of thousands of nerve endings in your feet provide an experience that will transcend your previous runner's high.

Every runner should run barefoot to learn their fundamentals and build strong, healthy feet. Once a strong foundation has been established, then, and only then, a decision can be made between barefoot and shod for running.

Barefoot running can be an odd, slow, painful experience, but it does not have to be.

Michael Helton
Minimalist shoe expert and pacer extraordinaire

Importance of Patience

Throughout the process of learning to run barefoot or in minimalist shoes, it is important to be patient. Your feet have likely spent many, many years encased in heavy, sweaty foot coffins (a term Barefoot Ted coined.) Those shoes have weakened the muscles, tendons, ligaments, bones, and plantar skin of your feet and adjacent anatomy.

In the beginning, you may be tempted to run farther than you should. In the barefoot running world, we refer to this as "too much too soon" (TMTS). You will also reach various breakthrough points in which everything seems to come together. Your form will finally click. Everything will feel great. You will be tempted to try out your newly perfected form. Exercise caution. Do not increase your mileage more than ten to fifteen

percent per week or your pace by more than fifteen seconds per mile per week. If you exercise adequate caution, your transition to barefoot running should be smooth and injury-free!

STARTING OVER

For regular, long-term shod runners, a big challenge is drastically dialing back the miles upon flipping to barefoot. A common strategy is to keep going with shoes in parallel and wean over to barefoot miles with time. However, once you get going, you probably won't feel like putting your shoes back on. My advice is to embrace the chance to start over. It is the nature of the beast to plateau over time in any endeavor. Celebrate the opportunity to reexperience rapid change and progress. It's exciting to double your mileage in the first week or two (albeit only from half-mile up to full-mile runs). Enjoy the sore calves and the restrengthening of your neglected foot muscles. Savor the challenge of stretching shortened tendons. And take the opportunity to augment your caloric burn with some cross-training: Yoga, for example, is wonderful in bare feet.

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Relax; Make Your Body Like a Wet Noodle

Relaxation is one of the fundamental skills all barefoot runners share. It is critical to developing the ability to run with little impact. You cannot run softly if you are tense. Running itself, like all physical activity, will result in some degree of tension. Exercise causes your sympathetic nervous system to acti-

vate, which increases heart rate, blood pressure, and all the other elements of the fight-or-flight response system. Your body is preparing for physical activity, which makes relaxation difficult. However, like every other element of barefoot running, it can be practiced.

I find it very helpful to use visualization to help relax my arms and legs. I pretend they are very loose and free flowing, much like a wet noodle. I move them around as if they are wet noodles, hanging loose in the joints. Odd? Perhaps. But it really does help with the visualization. When doing any walking or running activities, always imagine your arms and legs are loose and free like wet noodles. If the idea of wet noodles doesn't do it for you, find another image that helps to keep your limbs nice and relaxed.

Deep Breathing for Relaxation

Deep breathing is a very basic method used to relax. It will encourage your body's sympathetic nervous system to deactivate, making the "wet noodle" visualization even easier to accomplish.

To use deep breathing as a relaxation technique, find a quiet spot where you can comfortably sit or lie down. The process is easy—just slow your breathing down to fewer breaths per minute. I do this by inhaling slowly while I count to five, then exhaling for the same count. Dr. Mark Cucuzzella shared an excellent tip to help breathe while both relaxing and running: Relax your diaphragm muscles so your abdomen, instead of just your rib cage, expands with each breath. This allows more air to enter your lungs, which in turn allows more oxygen into your bloodstream. Repeat for two or three minutes.

You will notice an immediate difference. It will feel as if all the tension is leaving your body. Your arms and legs will start to feel heavier. You'll notice your heartbeat slows down.

I like to add some imagery at this point, by visualizing tension flowing down my body, down my arms and legs, and out of my fingers and toes.

After a few minutes, slowly open your eyes. Your entire body should feel more relaxed. At this point, you should be able to continue any of the activities in this stage while remaining very relaxed.

Deep breathing will help augment the "wet noodle" visualization by activating the underlying physiological process responsible for relaxation. It is also useful for those of you with small children, especially if they are as "spirited" as mine!

Progressive Relaxation

I used progressive relaxation with great success as a football coach. I would use the technique to help our placekickers relax prior to kicking field goals and extra points. Since we rarely scored, we didn't have much need for kicking extra points. Still, our kickers were the most relaxed in the league! Like deep breathing, this method will help turn off your fight-or-flight response, so you can relax into running.

Progressive relaxation involves tensing various muscle groups, holding the contraction for five seconds, and then slowly relaxing. Using this technique, cycle through all of the major muscle groups.

When I use progressive relaxation, I work each muscle group in the following order: feet, calves, thighs, hips (calling this area "the butt" makes me giggle too much), abdominal muscles, lower back, chest, upper back and shoulders, upper arms, forearms, hands, neck, and face.

For added effectiveness, I do a few minutes of deep breathing before starting progressive relaxation. Once you're finished, your body should be in the ideal relaxed state to begin barefoot running.

Barefoot Walking

One of the best methods to prepare for barefoot running is spending time walking barefoot. Quite literally, you have to learn to walk before you learn to run. Like all barefoot activities, walking barefoot will reduce the likelihood of injury once you begin running.

When it comes to walking barefoot, there is some disagreement on form. Some barefoot practitioners recommend using a midfoot strike; others recommend a heel strike. Since walking produces far less ground collision force, walking heel-first is not as dangerous as running heel-first. Either will work as long as it is comfortable. Most people seem to use one or the other depending on conditions such as terrain, pace, and stride length.

If it is comfortable for you, it would be best to use a midfoot strike while taking shorter, more frequent steps (shorter stride, higher cadence). This will help strengthen your feet and acclimate you to good barefoot running form.

When you begin walking barefoot, the experience is similar to going from a dark room to a lit room—there is a short period of discomfort. You may experience the same sensations when you go barefoot for the first time after winter. Although new barefoot runners are often preoccupied with this sensitivity, you'll quickly adapt to the sensations, so don't be discouraged.

It is important to remember to look where you are walking. This is an excellent time to develop the habit of quickly scanning the terrain you are about to walk over. This skill will be critical once you begin running.

Once you learn to run with ease and efficiency, you will begin adding terrain. Walking over that terrain prior to running will help build the skills and adaptations that are necessary. If you learn the trails and roads barefoot, you'll be better equipped to tackle them when you're ready to run.

Barefoot walking can be good practice to adapt a run/walk strategy for races. Newer runners often use this strategy to help cover a distance that would be difficult to achieve if running exclusively. Since you are using different muscle groups to walk and run, you distribute the workload. This results in greater endurance. It is also a common strategy for running ultramarathons. If you have aspirations to run those distances, learning to walk barefoot now will pay dividends in the future.

WALK-IN-PLACE DRILL

The purpose of this drill is twofold. First, it will help strengthen your anatomy to prepare for running. Second, it will teach you the very basic elements of proper form. The movements you perform in this drill will translate directly to actual walking and running.

Start by relaxing. Use the deep breathing drill if necessary. Stand on a hard, smooth surface. Your posture should be upright, and your arms and legs should be relaxed. Practice lifting one foot. When that foot is a few inches off the ground, immediately shift your focus to lifting the other foot while the first is still in the air. You will automatically lower the first foot and softly kiss the ground with it.

Focusing on raising the other foot is the key to success. Your brain will automatically allow the first foot to touch the ground using what should be your ideal foot touch. Alternate this lifting between feet. Go slowly at first. If you find you are paying too much attention to the foot touching the ground, stop for a moment and begin again until you are able to concentrate on lifting.

The goal is to try to make as little noise as possible. This acclimates your body to the muscle movements needed to walk and run softly. If you practice often, your brain will begin to develop the muscle memory needed to repeat this movement.

This drill can be practiced multiple times per day for varying amounts of time. You can practice it almost anywhere, at home when cooking dinner,

in the elevator at work, even in an airplane restroom. If you find your form or concentration slipping, stop and take a break.

This drill is best done in short bursts, over time. Start with one minute, then add one minute per day. When you reach five minutes without any pain or discomfort, you should be ready to move to the next stage. This drill can be done throughout any stage, as it will only help to hone your skills as a barefoot runner.

Terrain: Where to Start and Why

When you begin barefoot running, smooth, hard terrain is ideal. Asphalt roads, concrete sidewalks, running tracks, or gymnasium floors are good options. Any choice should be free of debris. A smooth, hard surface will serve two purposes: First, the hardness will give better feedback than soft surfaces. Second, it will reinforce the "foot-landing" concept, forcing you to run gently. In addition, the smoothness of the surface will prevent unnecessary friction in the beginning stages of learning. It is possible to learn on a rough surface, but I've found it to be distracting.

Once you develop a feel for form and have some degree of success (i.e., you can run a mile or two barefoot without pain during or after the run), you can graduate to different surfaces.

I recommend that you avoid soft, forgiving surfaces such as grass or sand until you have more experience. Running barefoot on grass or other soft surfaces may be tempting because it feels good, but the softness can inhibit your brain's ability to provide good feedback. Soft ground acts much like the thick, cushioned padding of traditional running shoes: It can hide bad form. The result is a longer learning period.

Once you learn good form, running on grass and sand is

perfectly acceptable. Running over sand dunes along Lake Michigan is one of my favorite workouts.

Scanning the Ground

Many new barefoot runners have a fear of stepping on glass, nails, and other dangerous debris. For the most part, this fear is unfounded. You possess a tremendous tool to avoid perilous obstacles: your eyes. By watching the ground where you're running, you can identify and avoid most dangers. After as little as an hour or two of consciously scanning the ground ahead, you begin to develop the ability to create cognitive, or mental, maps. These maps allow you to unconsciously avoid stepping on debris. It works like this:

Your eyes see an obstacle ahead of you. Your brain remembers the location of the obstacle. When you reach that location, your brain automatically places your foot in a precise spot free of debris. The more you run barefoot, the more refined this ability becomes. After a short period of time, you can run on the most littered urban streets without fear.

MARBLE DRILL

This is the final pre-running drill. Barefoot running requires the use of many muscles that are rarely used when wearing traditional running shoes. Walking in place will help develop strength, but the marble drill will help with those seldom-used muscle groups.

The drill is best done with the support of a chair. It can be done standing or sitting. Gather a few small objects, such as blocks, marbles, small rocks, or dice, and spread them on the floor. Practice picking up an object with your toes by curling them around it. Move the object a few inches to

one side, and then drop it on the floor. Continue manipulating the objects for one minute.

At the end of one minute, switch feet. Increase the workout by one minute per day total for the duration of this stage.

This drill will help strengthen the musculature of your feet. It also helps you adapt to actually using your feet as something other than shoe holders. If you have toys in your house, try using your toes to pick them up. My messy children have done wonders for my own foot strength!

Running Happy

> *"Fitness has to be fun. If it is not play, there will be no fitness. Play, you see, is the process. Fitness is merely the product."*
>
> GEORGE SHEEHAN

All too often, I see other runners scowling or wincing in pain. It is abundantly clear they are not enjoying themselves. Running should be fun, especially when we ditch the shoes! As you begin your journey into barefoot or minimalist shoe running, keep the following ideas in mind:

- *Smile often.* First, it makes others smile, which is wonderful publicity for barefoot running. Second, barefoot running is enjoyable! It's like being a kid again. Embrace your inner child! Third, by smiling, you are providing feedback to your brain that actually makes you feel happier (Kleinke et al. 1998), thus making the activity more fun.
- *Be nice.* If you encounter another runner, say hi. Other people mirror our behaviors. If half of the runners on the road and trails are friendly and nice, they'll convert the "grumpy" half.

- *Thank volunteers at races.* They are taking valuable time out of their day to help *you*. Do not complain, scold, or belittle them. If they do not fill your water bottle to your satisfaction, thank them and do it yourself next time. If you follow the first two rules, this one should come naturally.

Running happy

3

Starting to Run Barefoot

Taking Your First Strides

The basics of good running form can be boiled down to three simple concepts: posture, foot landing, and cadence/stride length. This idea of simplified form was influenced by Curt Munson of Playmakers running store in Okemos, Mich.; Walt Reynolds of the Trainers Studio in Lansing, Mich.; and Jon Sanregret of Merrell. This section will teach these three basic ideas.

By the end of this stage, you will have developed the ability to run barefoot. Once you've mastered the basics, you will use that perfect form to advance both speed and distance to help reach your running goals.

You will be ready to move on to the next stage when:

- you are able to run one and a half miles without pain during or after the run;

- you feel comfortable running in a relaxed, smooth manner with a cadence of at least 180 steps per minute.

Posture (Head, Torso, Arms, and Knees)

Good form begins with good posture. Poor posture leads to an inefficient running gait and an increased risk of injury. Good posture consists of:

- *Head:* Keep your head level, with eyes scanning the ground.
- *Midsection:* You do not want to slouch. While it is important for your arms and legs to be very loose, your midsection and torso should be rigid, with your core muscles engaged.
- *Arms:* Elbows should be bent at a forty-five- to ninety-degree angle, with arms held close to the body. Do not allow your arms to swing across your body; rather, let them swing along your side.
- *Knees:* Bend your knees slightly throughout your stride. At no time should they be fully extended. Likewise, do not bend them excessively.

A simple method can be used to ensure your body is properly aligned. Stand in a relaxed position. Interlock your fingers and extend your hands, palms outward, away from your body. Move your interlocked hands above your head, straighten your elbows, and stretch upward. This motion aligns your back and head. Now release your fingers and drop your arms to your side while bending your elbows at a forty-five- to ninety-degree angle. Bend your knees slightly. This simple exercise puts your body in a perfect running posture.

Balanced Foot Landing

Traditionally, this is known as the foot "strike," but that descriptor implies that it is a violent collision between your foot and the ground. It is actually the exact opposite. Your foot should gently touch the ground with as little force as possible, as if your foot is gently kissing the ground beneath you. (This should be like a gentle peck on the cheek, not a "teenagers in the back row of the movie theater" kiss.)

Many barefoot runners will debate about the exact method you should use when your foot touches the ground. Should you land on the ball of your foot? Should you land on your forefoot? Some even suggest touching your heel first. After observing many barefoot runners, I have concluded that it does not really matter which part of your foot touches the ground first.

There are two important points. First, as previously mentioned, your foot must gently kiss (or touch) the ground. Second, no matter which part touches first, the rest of your foot must then quickly touch also, so that your entire foot is in contact with the ground.

When doing the walk-in-place drill, you will begin to develop a feel for the part of your foot that is most comfortable touching first. If you need a place to begin, I suggest starting with a midfoot landing. The midfoot is the ball of your foot, or the area between your toes and arch. This appears to be the most common technique. If you find another part of the foot to be more comfortable, use it. Remember, the key to developing good form is listening to your body.

You can monitor the relative softness of your foot landing by listening to the noise you make when your foot touches the ground. The quieter, the better.

TIPS ON PROPER FOREFOOT OR MIDFOOT STRIKE FORM

There is no single "perfect running form." Everyone's body is different and no single technique could be best for everyone. Here are some general tips:

A good landing should feel gentle, relaxed and compliant. You typically land on the ball of your foot towards the lateral side. After the front of your foot lands, let the heel down gradually, bringing the foot and lower leg to a gentle landing as you dorsiflex your ankle under the control of your calf muscles. It's like when you land from a jump, flexing the hip, knee and ankle. Again, the landing should feel soft, springy, and comfortable. It's probably good to land with the foot nearly horizontal so you don't have to work the calves too much.

Do not over stride (land with your foot too far in front of your hips). Over striding while forefoot or midfoot striking requires you to point your toe more than necessary, adding stress to the calf muscles, Achilles tendon, and the arch of the foot. It often feels as if your feet are striking the ground beneath your hips. In this respect it feels like "running in place" (as runners sometimes do when waiting to cross a street). It is also similar to the way one's feet land when skipping rope.

A good way to tell if you are landing properly is to run totally barefoot on a hard, smooth surface (e.g., pavement) that is free of debris. Sensory feedback will quickly tell you if you are landing too hard. If you run barefoot on too soft a surface like a beach, you might not learn proper form.

Daniel Lieberman, PhD, Madhusudhan Venkadesan, Adam I. Daoud, and William A. Werbel

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JUMP DRILL

The jump drill is designed as a strengthening exercise. Find a hard, smooth surface. Stand with your feet shoulder width apart. Keep your upper body perpendicular to the ground. Bend at your knees until they reach about a ninety-degree angle. Now jump up off the ground in one quick, smooth motion. When you land, you want to use your feet, ankles, and knees to absorb as much of the impact as possible. You should try to land as quietly as you can.

When doing the jump drill, I like to imagine I am a cat jumping off a chair. Cats always seem to land without sound, so the analogy works for me. Repeat this five times in a row several times per day for the duration of this stage. Like the walk-in-place drill, this drill can be done throughout all stages to help strengthen your feet, ankles, knees, legs, and hips.

Lifting Your Feet

Now let's talk technique. How your foot hits the ground is an important part of barefoot running. Most shod runners will use a heel strike. There are two problems with overstriding. First, the impact acts as a slight braking action that interferes with your forward progress. This wastes a tremendous amount of energy with every step. Second, it causes undue stress on your entire body because of the force of the strike.

This force is thought to be a major contributor to the many pains experienced by traditional shod runners. The solution is to allow your feet to softly touch the ground directly below your center of gravity. Learning to "run softer" can be difficult. The easiest way to achieve this is to focus on *lifting* your foot straight off the ground instead of driving it into the ground. This psychological shift in focus from landing to lifting will automatically result in a softer step. If we focus on lifting, we forget about the other foot that is touching the ground. When

we forget about that foot, our brain takes over and automatically causes the foot to land with less force.

The focus on lifting the feet will also help prevent another common problem among new barefoot runners: "pushing off." Many runners mistakenly believe their forward motion is created by using the foot on the ground as an anchor point and pushing off against that anchor to generate forward motion.

This technique causes undue stress on the body, especially the legs and feet. It also causes runners to land with much more force than they would if they focused on lifting their feet.

Cadence/Stride Length

A fundamental difference between barefoot or minimalist shoe running and traditional running in cushioned shoes is the rate at which your feet touch the ground. Most runners who wear traditional running shoes strike the ground approximately 140 to 160 times per minute. Barefoot and minimalist shoe runners touch the ground at a significantly higher rate, or cadence. The minimum cadence a barefoot runner should use is around 180 steps per minute. (I use an even higher cadence, averaging approximately 200 steps per minute.)

This faster cadence causes two significant changes to your running form. First, it shortens your stride, helping to prevent overstriding.

Second, it helps you develop a more efficient form by limiting excessive movement. The shorter the stride, the less vertical movement runners develop. Vertical movement represents wasted energy due to your body having to work against gravity with each step.

As previously mentioned, stride length will be shorter when running barefoot. The exact length of your stride will be

determined by your own unique physical characteristics. The idea is to find a cadence greater than 180 steps per minute coupled with a relatively short stride that results in the greatest comfort for you.

BABY-STEP DRILL

Learning to shorten your stride and increase your cadence can be one of the most difficult concepts to understand as a new barefoot runner. People who have spent significant time running in traditional running shoes grow accustomed to the methodical lumbering of a slow cadence. The faster, lighter barefoot cadence feels unnatural. It is possible to prime your body for the faster cadence by spending about one minute taking exaggerated fast, short steps.

This drill is easy. Find a flat area about thirty feet in length. Try running the distance by taking as many steps as possible, as quickly as possible. These tiny, baby steps will acclimate your body to the faster cadence of barefoot running. When you begin running, the 180-plus cadence will not seem as unnatural.

METRONOME DRILL

A metronome is a small device that beeps or clicks at certain intervals. Metronomes are widely available in music supply stores or as an app for smartphones. Alternatively, you can find an MP3 file online by doing a Google search for "metronome." If you prefer music, "Turning Japanese," by the Vapors (thanks to Karen Szypulski), has 180 beats per minute.

The metronome drill will teach you the ideal cadence for barefoot running. Set your metronome to 180 beats per minute. Most people measure their cadence by timing the metronome beats to each foot strike. I prefer to lift my foot with each beat. It creates a subtle psychological effect of lightening each foot touch.

Some people may have difficulty keeping time with the beat. I fall into this category, and I found it to be as effective to simply count the number of times I lift my feet in a thirty-second period, then multiply that by two. If my cadence is below 180, I take smaller, faster steps.

Slow Running

Slow running is the pinnacle activity of this stage. After you spend some time strengthening your body and developing some of the basic barefoot running skills, you will be ready to start running. You will have developed an excellent foundation to make the transition to barefoot running.

To begin, find a smooth, hard surface free of debris. Do the deep breathing drill or progressive relaxation drill to ensure you are in a relaxed state. Start by slowly walking in place, focusing on lifting your feet. After a few steps, start moving forward in a slow walk. Gradually increase your cadence until you reach the 180 mark. You should now be running at a slow pace. Continue to stay as relaxed as possible. Focus on lifting your feet. Your other foot should be gently landing on the ground.

Depending on your experience level, limit your first run to between a quarter and a half mile. If you feel any pain, stop. After every "run" day, schedule a rest day. This will allow your body to heal. Remember, you are using muscles, tendons, ligaments, and bones that have not had to work for years!

A rest day will also allow you to assess any potential soft-tissue damage that may have occurred, since this damage does not always appear immediately after a workout. Each subsequent "run" day, you can increase the mileage by an eighth to a quarter mile. Once you reach one and a half to two miles, you should be ready to advance to the next stage.

Run Like a Ninja

Once you master running relaxed, you can begin to add running softly, or running light. When running barefoot (and perhaps eventually in minimalist shoes), it is important to run softly. Make sure you are in an area free of obstacles, debris, or walls. In order to concentrate fully on how softly you're hitting the ground, you're going to remove one of your senses: Close your eyes. Run for about twenty-five to fifty yards.

Listen carefully to the sounds your feet are making as they touch the ground. Ideally, you should make little or no noise. This is an excellent indicator of good form. If you are making significant noise, your feet are not softly landing on the ground. Refine your form, remembering your lift, until you can run silently. It may help to slow your running pace during the learning phase.

To help achieve silent running, I like to imagine one of two scenarios. First, I will pretend I am a ninja sneaking silently around my environment. Should you use this analogy, it is not advisable to actually dress like a ninja. Your neighbors will likely start talking, and throwing stars can accidentally impale you.

If you are not familiar with ninjas, I recommend using another analogy, such as a cat stalking prey. Same deal with this analogy—it is not necessary to dress like a cat.

Using scenarios in this way adds an element of fun to training and helps to distract your conscious mind so you don't overthink your running. Closing your eyes and running is a good way to allow your brain to receive, interpret, and react to the information from the soles of your feet and the rest of your body.

Advanced Barefoot Running

Now the Fun Really Begins!

The advanced stage introduces you to activities and concepts that will help you progress as a barefoot runner. Before beginning this stage, you should be able to run a mile and a half barefoot without pain during or after the run. Also, you should be comfortable running with a relaxed, light form. This section will introduce a variety of challenges that will help hone your skills as a barefoot runner, including adding hills and varied terrain to your training. I will also introduce guidelines to begin expanding both speed (pace) and distance.

Running in racing flats

Fall Forward and Keep Feet Under Your Body

Running with your feet landing on the ground directly under your center of gravity is one of the fundamental elements all barefoot runners must learn. Many shod runners touch the ground in front of their center of gravity, but it is *far* more efficient to move that point of contact back so your feet contact the ground directly beneath you. For most people, this process automatically occurs when they shorten their stride, increase cadence, and use more of a midfoot touch.

Some people will still struggle with this concept. An easy way to implement it is to use a slight forward lean. Personally, I do not use much of a lean most of the time, but many find it useful. The idea is to keep your midsection (core) contracted and lean slightly forward at the ankles.

To visualize this, I think of ski jumpers. They keep their entire body rigid but lean out over their skis by bending at the ankles. The barefoot running lean isn't nearly as pronounced, but that should give you the general idea. The exact angle of lean is a function of pace. The faster the pace, the greater the lean. At slow speeds, the lean may be only one or two degrees. At a full-speed sprint, it may be closer to fifteen degrees. When you lean while running, you will have a slight sensation of falling forward.

Forward lean

Learning the Lean

"Learning the lean" is designed to help you understand the feeling of leaning forward while running. It can also help you develop the feel for leaning at the ankles.

Stand facing a wall, about six inches away. Keeping your body straight, lean forward by bending at the ankles until your forehead touches the wall.

Again, visualize a ski jumper flying through the air. How you feel when leaning on the wall is the approximate forward lean you should have when barefoot running.

Wall drill

Increasing Speed and/or Distance

Learning the art and science of barefoot running is an exercise in patience. The basic form required to run injury-free is fairly intuitive, but mastering it does take time. This time frame can be disheartening to the new barefoot runner. Maybe he is accustomed to running a certain weekly mileage that simply isn't possible when learning to run barefoot. Or maybe he regularly runs at a fast pace and cannot match that speed without shoes.

When transitioning, some may opt to continue their shod running. While this can be a good strategy for pacifying the inner competitor who simply cannot give up the mileage or speed, the new barefoot runner will eventually cross a thresh-

old in which running in her old shoes will be uncomfortable at best, injurious at worst. At this critical juncture, she will invariably question her decision to run barefoot. She may have been an accomplished runner. Now she can only muster short, slow distances barefoot; shoes are no longer an option.

The progression of speed and distance is very slow when beginning barefoot running. Finding a form that works well for you can be a difficult task. It may take considerable time and patience, but your body needs to acclimate to the new style of running. Bones, muscles, tendons, and ligaments need to adapt from being imprisoned in the foot coffins. Run too far or too fast barefoot and you will likely develop soft-tissue injuries, such as the dreaded top-of-the-foot pain. Worse, you may develop a stress fracture.

Your adaptation period can range from annoying to frustrating to downright depressing. It will feel as if you will never regain your old speed or distance. Worry not, new barefoot runner: There *is* light at the end of the tunnel!

Once you find a form that works for you and you allow your feet, ankles, legs, and the rest of your body to adapt to the feeling of running sans shoes, you will be free to increase both distance and pace—but you must wait until you have allowed your body to adapt and have learned good form. You should still exercise caution and follow reasonable guidelines, but the rate of improvement increases at a faster rate. You will reach a point at which you can run longer and/or faster. Most people find this point once they can run comfortably for five or six miles. You will then be able to run more weekly mileage because you will be less prone to injury. Ultimately, you will find you can run faster without the anchors (i.e., shoes) tied to your feet.

If you were a runner prior to starting this journey, you will regain your previous abilities. Have fun with barefoot running. Relax. Smile. Your feet will enjoy the newfound freedom—you might as well enjoy it, too.

RUN/WALK DRILL

The purpose of this drill is to make the transition between walking in place, walking barefoot, and running barefoot. Most runners run with a gait similar to their walking gait, which results in severe overstriding with a heavy heel strike. This drill helps you learn to discriminate between the two. Find a smooth, hard surface that will allow you to run for about a quarter of a mile without interruption. A local track is an excellent choice.

Start by walking relaxed in place for thirty seconds. Then move in a slow walk forward for thirty seconds. The key is to maintain the same relaxed foot lift and gentle touch. After thirty seconds of walking, switch to a run at a cadence of 180 for thirty seconds. The key to the run portion is to maintain the relaxed foot lift, gentle touch, and 180 cadence for the entire thirty seconds.

After the time expires, slow down to a walk, as you did immediately before the run. After thirty seconds, walk in place. Repeat this entire cycle a total of three times. On subsequent days, add one cycle to each practice session. This drill will help you put each element together into one complete package.

Running Efficiently

The next concept to master is the ability to run efficiently. You should be adept at running with a relaxed, smooth form. Your goal should be to systematically eliminate all wasted movement to be able to "float" gracefully over the ground. I call this state "running smooth."

Being able to run smooth is the last concept to master to increase speed and distance.

To add efficiency, make sure all body parts are moving forward. Flailing is a telltale sign of inefficiency—don't allow your arms or legs to swing wildly from side to side. Lift your feet only as high as necessary to clear the tallest obstacles in your

path. You should limit your vertical movement as much as possible.

Some runners "hop" with every step, a result of aggressively pushing off to propel forward. It is most often caused by overstriding. This vertical movement represents wasted energy and increases the shock of touching the ground. You can determine "bounciness" by wearing a necklace, ponytail, or anything else that will bounce up and down if you hop.

When I work on increasing my efficiency, I like to imagine I am a graceful animal, such as a gazelle. Other times, I may imagine I am water smoothly flowing over the terrain. Regardless of the analogy, I work to whittle my movements down to the essentials so that no energy is wasted.

Experimentation

> *"Each of us is an experiment of one—observer and subject—making choices, living with them, recording the effects."*
>
> GEORGE SHEEHAN

Learning to run barefoot will require you to try many different techniques. You must be open to experimentation. You must be willing to adopt anything that works and discard anything that does not.

Whenever you encounter something new, try it a few times. If it seems to lead to improvement, stick with it. If it does not, revert to what worked best. When going through this process, it is important to change only one variable at a time. If you change multiple things at once, it will be impossible to determine which variables were successful or unsuccessful. It may help to keep a journal of the changes you try, so you can objectively determine what does and does not work.

Studying other running techniques such as Good Form Running, Evolution Running, ChiRunning, and the Pose Method can be useful in this regard. Each method will have many different teaching points and drills that can be used for experimentation.

Fartlek Run

A fartlek run is a training run of varying speed. There is no predetermined pace; you run based on feel. When doing fartlek runs, start slow to warm up. Once you are warm, speed up to the fastest pace at which you are currently comfortable running. This will be determined by your barefoot experience. If you are new to barefoot running, it will be a slow pace. After several months of barefoot running, this pace will approach or even surpass your 5K pace.

Run at this pace for a short time, perhaps one minute. After the minute, slow down to a walk. Once you recover, speed up again. Repeat this process for a predetermined time depending on your level of conditioning. You can do this activity once or twice per week.

Fartlek runs constitute a major component of the training plans you'll find in chapter 8.

5

Troubleshooting

When you begin the transition to barefoot and minimalist shoe running, you may encounter some setbacks. Most issues people experience are predictable. Many are related to the need to strengthen your body due to the atrophy caused by traditional running shoes. Being patient will alleviate all of these problems, but it is easy to get a little overzealous.

Toughening the Soles of Your Feet

The idea of toughening the soles of your feet is one of the most misunderstood concepts in barefoot running. There is no need to do anything special to your feet. Some newer

barefoot runners have been known to try some strange methods to speed the process of toughening their soles, including rubbing their feet with sandpaper, dunking them in ice water, and even urinating on them. I suspect the last one was the result of someone accidentally posting a message on a fetish forum.

If you begin slowly, your feet will adapt. Your skin will become more resistant to friction. Contrary to popular belief, you do not develop hard calluses on your soles. Rather, the skin becomes very smooth, much like soft leather. In my opinion, the more important adaptation has to do with tactile recognition. With practice and experience, you'll discover that your soles will develop the ability to "feel" the terrain underfoot. This ability is a major element of preventing injury; it will keep you from doing too much too soon.

Once you become more experienced, the increased tactile sensation will allow your feet to immediately react in the event you step on something sharp and/or painful. Depending on the nature of the debris, you develop one of two reactions. If it is sharp and likely to cause damage, you shift your weight in a way that avoids driving the foot down on the object. The other reaction occurs if the object is more blunt. Your foot will relax to maximize the surface area of your skin in contact with the object. Jesse Scott, a friend and fellow barefoot/minimalist shoe ultrarunner, described this process as your foot "melting" over the obstacle. This melting results from the reflexive relaxing of the foot when nerves detect something painful.

The more barefoot experience you gain, the faster this reaction happens. After years of barefoot running, I have developed the ability to run on leaf- or snow-covered trails because I can feel the hidden terrain. With practice and experience, you can develop this ability, too!

Blisters

Blisters are a fairly common issue for the new barefoot runner. Generally, they result from some combination of heat, friction, and moisture. If all three are present, blisters tend to form quickly. In the absence of one variable, they may still form if the other two conditions are severe. Under extreme conditions, blisters can form with only one variable present.

For the new barefoot runner, friction is usually the main culprit. Moisture is a nonissue unless you are running in mud or rain. Heat can be an issue if you're running on a hot surface such as asphalt on a sunny day or some treadmills.

If blisters do develop, they can be an indicator that your form is not quite as good as it could be. Where they develop can be very informative. If they form on the heel, it's usually an indicator that you are heel striking or overstriding. If they develop on your toes or the ball of your foot at the base of your toes, it can be an indicator that you are pushing off with each stride. Blisters along the outer edge of the sole of your foot usually indicate that your foot is not landing under your center of gravity. If you do develop blisters, slow down. You are most likely running too fast or too long for your current skill level.

If you do get blisters, do not pop them. It will increase the likelihood of infection. After some time, the blister may pop on its own and eventually reveal soft, sensitive skin. Be very careful with this new skin; it will not be acclimated to the rigors of barefoot running.

I develop blisters on a fairly regular basis, because I continually engage in ill-advised adventures. In most cases, these adventures involve running too fast for my current level of acclimation. Once the blisters pop and the old skin tears away (or I remove it), I cover the area with extra-adhesive bandages.

I may have to do this for a week or two while waiting for the new skin to harden.

Foot Injuries

One of the dangers of beginning barefoot running is doing too much too soon. Your feet have likely spent most of their active life confined in shoes, which have weakened the bones, muscles, ligaments, and tendons. The skin on the soles of your feet will not be accustomed to the sensory input from the ground. In order to prevent injuries, you must use caution.

Barefoot running feels wonderful, and the urge to do too much before your feet are ready is very powerful. As such, it is important to follow a conservative plan, even if you feel great in the beginning. Going too fast may result in a myriad of injuries, including tendon and ligament damage, excessive blisters, stress fractures, and other overuse injuries. If at any time you experience pain, STOP! Add a second day of rest, and then try again. Continue until you are pain-free. In the event you experience severe pain, seek medical treatment.

Do not give in to the temptation to "run through" the pain. The soft-tissue injuries that can occur during the foot-strengthening process can set your progress back by weeks or even months. Too-much-too-soon injuries are the greatest obstacle to successfully transitioning to barefoot running. A fairly universal complaint is top-of-the-foot pain, or metatarsalgia. It feels like a dull ache on the top of your foot (see photo). This seems to

Common top-of-the-foot pain

be a function of your foot anatomy adapting to the different stresses of using new muscles, tendons, and ligaments.

Mild soreness is not a major issue. It will feel similar to muscle soreness after beginning any exercise routine. Generally, you can train through this dull ache. If the pain becomes moderate to severe or is present when you're sedentary, stop. Rest until the pain subsides. Give this process time, and the rewards will be great!

Achilles Tendon and Calf Pain

Aside from TOFP, the other common issue experienced by new barefoot or minimalist shoe runners is calf and/or Achilles tendon pain or tightness. The cause of this is obvious: Traditional shoes, running or otherwise, have a built-up heel that is higher than the forefoot region of the shoe. Think of high heels, just not quite so dramatic. The more we wear these shoes, the more we chronically shorten the Achilles tendon.

When we move to barefoot or minimalist shoe activities, the tendon is stretched, which causes calf tightness. If we are not patient during the transition to barefoot or minimalist shoes, we run the risk of injuring both the Achilles tendon and the calf muscles. Also, tightness of the calf and Achilles tendon can lead to other problems, such as plantar fasciitis.

Some degree of tightness or soreness of the calf muscle is expected. This is the normal consequence of using a muscle that has been allowed to weaken for years. If you are patient, there is no danger. However, if you fall victim to doing too much too soon, it is possible to develop a litany of problems associated with the calf muscles and Achilles tendon. If you experience any acute or moderate pain, stop immediately. If you experience severe pain, seek medical treatment. Rest until the pain subsides, then ease back into your training schedule.

Shin Splints

Shin splints are fairly common in shod runners but rare among barefoot runners. They are believed to be caused by a combination of heel striking and overstriding. When the heel hits the ground, the force drives the forefoot down in a plantar flexion position. This rapid, pounding stress causes the shin muscles to stretch, resulting in an involuntary contraction. This is believed to be the cause of the pain.

If you experience shin splints when running barefoot, it is almost always caused by overstriding, but it is easy to correct. Simply focus on your feet touching the ground directly below your center of gravity, not in front. I've found the easiest way to accomplish this is to shorten your stride and increase your cadence.

Puncture Wounds and Cuts

Puncture wounds and cuts are one of the inherent dangers of barefoot running. I do not believe the danger is as significant as some anti-barefoot naysayers claim, but it is real. I have been running barefoot for thousands of miles on all types of surfaces, in all weather conditions, at any time of day or night. In that time, I have stepped on approximately five thorns and one glass sliver.

This danger is easy to minimize. As I have discussed before, simply watch your path. Almost all potentially dangerous materials are easy to spot. In the event you do step on something, your body's reaction to either shift weight to the other foot or relax the foot to allow it to "melt" around the object will minimize the likelihood of driving the object into your foot.

Stepping on glass is a common fear. This is understand-

able—it's sharp! However, in my experience, most glass found along roads or sidewalks is surprisingly dull. If the glass has been exposed to the environment or traffic, the sharp edges will have been ground to a harmless edge. Of course, I would always advise you to avoid any glass, even if it is harmless.

In the event you do get a thorn, sliver, or other object embedded in your foot, you should be able to remove it yourself. Do so right away, and end your run. If the cut is severe, seek medical attention. If it is not, usually a pair of tweezers, some antibacterial ointment, and an adhesive bandage are all you will need to fix the problem.

If you cannot grasp the object with tweezers, place a dab of Elmer's glue over it. Allow the glue to thoroughly dry, and then peel it off. Many times, the object will adhere to the glue and be easily removed.

What If I Still Have Problems Running Barefoot?

If you've worked through the techniques and drills found in this book and are still having difficulty, you have several options. Remember that not everybody seems well suited for barefoot running. Barefoot running is based on the idea that we can learn to respond to feedback from our bodies. For some, that does not come naturally. Or your learning style may be different from my teaching style. If that is the case, don't fret.

Your first option is to continue working on the same drills and practicing the same skills. If my methods are not working for you at this point and you have spent many months working with them, there is little chance they will net positive results in the future.

The second option is to explore other barefoot teachers' methods. Ken Bob Saxton, Ted McDonald, Lee Saxby, Preston Curtis, and Michael Sandler are all wonderful instructors.

Each of their methods varies slightly, not only from my methods but also from one another's. Again, finding a good match for your own learning style is important.

The third option is to explore one of the running programs I mentioned earlier in the book. Good Form Running, Chi-Running, Evolution Running, and the Pose Method are all excellent programs that will teach you to run in a more efficient way. Each of the four methods teaches the same very basic running skills, but each uses very different methods with different areas of emphasis. One of these four may be better suited for your particular learning style.

6

Challenges

New barefoot and minimalist shoe runners are bound to face issues and challenges that go beyond the physical. This chapter will help you navigate the ones that arise with the logistics of beginning barefoot and minimalist shoe running. It will also help you deal with other people, from complete strangers to those closest to you, if they aren't fully supportive of your choice.

Overly Technical Advice

Sometimes new barefoot runners will solicit advice from more experienced barefoot runners. Although the sharing of information is always a good thing, sometimes the new barefoot

runner can become overloaded with information. As previously mentioned, different people have different learning styles, so while some people may become overwhelmed with detailed information about form-related issues, others will benefit. New barefoot runners benefit most from developing the ability to listen to their bodies. If you are concerned about keeping your knees bent at a precise angle, your brain will be too distracted to respond to the input it is receiving from your body, so it is best to hold off on soliciting advice on specific details. Once you get a feel for your ideal form, then you will be free to tinker with the small details. Remember, barefoot running is about feeling, not thinking.

In the event you follow the advice in this book, practice the drills, put in the time, and are still experiencing difficulty, one of the previously mentioned running programs such as the Pose Method or ChiRunning can be beneficial. If you would like to enlist the assistance of a barefoot running coach, the Barefoot Runners Society (thebarefootrunners.org/build2) maintains a database of barefoot coaches.

I find that relaxing my feet reduces the pain of running over a rough patch of old asphalt.

During the first half mile my feet can feel a bit tender. If I stick to it, the tenderness vanishes and I can easily run ten or more miles without any pain or subsequent injuries.

I'm learning that my conditioning results are better if I run multiple short runs over a week rather than a single long run.

Some days when I start out running in shoes, my calves can be stiff and my thighs aren't cooperating. Without fail, if I remove my shoes everything relaxes and becomes more fluid. Going barefoot can save me from a bad run.

> Learn to enjoy your run by taking in the view of your surroundings. Don't zone out like it is easy to do when running in traditional shoes. Your run should be quality time for your spirit, not a chore for your body.
>
> *Nick Vaernhoej*
> *barefootnick.com*

Hills

Running on hills will add variety to your training routine. It will present a new challenge, as it requires at least some modification of form. If you have aspirations of trail running, learning to effectively navigate hills will be a necessity. Learning effective hill running is not much different from learning to run on any other surface or terrain. Start slow and gradually develop speed.

I recommend using the same form for going up hills as for running on flat roads or sidewalks. To reduce the likelihood of injury, it may be helpful to increase your cadence and decrease your stride length. Keep your muscles as relaxed as possible. If I am running on trails, I prefer to power-hike up the hill. If I do run, I use the same form I use on flat ground.

I have found uphill running to be easier when running barefoot. As Barefoot Ted has accurately pointed out, the bare foot acts as a traction-control system. You will immediately feel any slippage underfoot. With practice, you will automatically adjust your weight and use your toes to grip the ground. The result is a dramatic increase in efficiency.

Downhill on trails can be a little more difficult depending on the terrain. The fundamental problem lies in the midfoot

landing used by most barefoot runners. If you land on your forefoot, your foot will be in a plantar flexion position (pointing down). This can put added stress on your knees.

Shod runners avoid this by landing on their heels as they descend. Barefoot runners can do the same, but the shock of landing on the heel can lead to injury.

Start with feet and hips facing one direction.

A better solution is to shorten your stride and subtly shift your weight back. To shift your weight, move your shoulders about two inches backward. This keeps your body upright but helps take stress off your knees, while still allowing a midfoot landing.

Swivel hips so you are facing in the other direction.

Another solution is to use what I call the zigzag run. If you have ever watched downhill or mogul skiers, the technique will seem familiar. Start the descent by running to the left at a forty-five-degree angle to the base of the hill. Take a few quick, short steps, then turn ninety degrees to the right. You will end up facing the right at a forty-five-degree angle to the base of the hill. Take a few steps, and then repeat the process.

Continue this pattern until you reach the bottom.

This technique will disperse the workload among

different muscles. It will also reduce the likelihood of injuring tendons and ligaments.

Treadmills

Treadmills can be an effective tool to help new barefoot and minimalist shoe runners learn proper form. There are a few concerns associated with treadmills.

The deck of most treadmills will heat up as speed and distance increase. It can generate enough heat to actually burn bare feet. If your treadmill heats up, you have a couple of options.

You could move from one area of the deck to another. When I began barefoot running, I used this strategy. I had five areas on the treadmill deck that I would rotate among. Since most of the heat was generated in the area I was running, moving around delayed the buildup of heat in one spot. The problem with this tactic was safety: I would occasionally step on the rail of the treadmill, which would cause me to stumble.

The other solution is to wear minimalist shoes. While it is not the best condition for learning good form, it is better than not running.

The second major concern with treadmills has to do with abrasiveness. Most treadmill decks have a tendency to cause cuts and blisters. This seems to be an effect of the physics behind the moving belt. It is more difficult to pick your foot up and place it down without some sort of shearing force.

Normally, barefoot running requires your foot to move vertically. Since the belt is moving, placing your foot straight down will result in some friction. You can overcome this by employing a concept known as "pawback." Essentially, you want your foot to be moving backward as it touches the belt. If your foot is moving at the same speed, friction is dramatically

reduced. This can be accomplished by starting at a slow speed—practice moving your foot backward to match the speed of the belt with each step.

Unfortunately, pawback is a difficult skill to master. The best solution is simply to start slow. Begin with walking and build up to slow running. With time, you will be able to tolerate faster speeds.

If you learn to run barefoot using a treadmill, you will have some issues with running on nonmoving surfaces. This is not a major obstacle, as you will quickly adapt to running without pawback, but it will require some practice. Do not attempt to run at a fast pace or over a long distance without first practicing non-treadmill running techniques.

If you choose to run barefoot on a treadmill at a gym, you may be asked to leave. Unfortunately, not all gym personnel are enlightened as to the benefits of barefoot running. Many people worry about sanitation, but feet are surprisingly clean. "Smelly" feet are caused by the warm, dark, moist environment of shoes. Many also worry about safety. As long as you pay attention to your surroundings, going barefoot is no more dangerous than wearing shoes. You can either present your case to the gym management using information from this book or seek out a gym that allows barefoot running on their equipment.

Varied Terrain

It is possible to run barefoot on almost any terrain with practice. I advocate starting on a smooth, hard surface such as asphalt or concrete and then slowly adding a variety of progressively more difficult terrain. This ever-increasing challenge will help hone your skills as a barefoot runner. Remember,

while it is tempting to start on very soft, forgiving terrain (such as grass), it greatly limits the feedback your feet receive. The result is that poor form may go unnoticed. Ken Bob Saxton describes running on grass as a dessert: something that should be enjoyed after learning to run on harder terrain.

In regard to terrain, it is *always* important to watch the ground on which you run. The distance at which you fix your gaze is dependent on the ruggedness of the terrain. Smooth asphalt with little or no debris will allow you to watch the ground fifty feet in front of you and still be able to avoid obstacles. Very technical trails with lots of rugged rocks, roots, and other such debris will require you to watch only a few feet in front of you.

In either case, you'll eventually develop foot-eye coordination. Your eyes will scan the terrain in front of you. Your brain will create a cognitive map of that terrain and then automatically guide your feet to the areas that are free of debris.

On smooth, clear asphalt, you can practice this skill by avoiding small cracks, paint marks, and any other "obstacles." Eventually, you can advance to areas that may have real obstacles. The key is to move at a slow pace in the beginning. Walking rather than running on moderately difficult terrain is another excellent training tool.

Another handy skill that develops is the ability to immediately react in the event you step on a sharp object. Your body has a unique ability to respond by instantly shifting your weight to minimize the damage caused by the object. It is difficult to describe this skill until you experience it. Once it is honed, however, it will allow you to run on very difficult terrain with limited visibility.

I have advanced to the point of being able to run barefoot on fairly technical leaf-covered trails. If I do not see an object, my brain has enough trail experience to be able to immediately

adjust and shift my body to prevent injury. This skill will develop as you spend more time on various terrains.

It can be very useful to learn your local plant life. For example, I live in an area where oak trees are common. Oak trees produce acorns, which litter the ground below. When I see an oak tree along a sidewalk or trail, I expect to see acorns. I shorten my stride and slow my pace. This allows me to be more selective with foot placement and maintain balance in the event I do step on an acorn. Raspberry plants provide another example. Dead, thorny raspberry plants are sometimes scattered on the ground near raspberry patches. I avoid these areas, as it can be very difficult to see the dead plants on the ground. In essence, it pays to have knowledge of your surroundings.

DEBRIS DRILL

The purpose of the debris drill is to practice your ability to run through a field of objects that could be harmful. Part of this critical skill is the ability to create a mental map of the terrain in front of you.

Find an open area free of obstacles such as furniture or stairs if done indoors, or signs, parking stalls, or manholes if done outside. Spread debris across the floor or ground. Use something non-injurious—small pebbles, building blocks, or small stuffed animals, for example. Avoid things such as thumbtacks, broken glass, or live animals. Look at the debris pattern for a moment. Close your eyes and try to walk across the floor based only on the map in your head.

This sharpens your ability to move your feet to the clear areas based on your mental map. It also hones your ability to adjust your body weight when you do step on something as discussed in the "toughening your soles" section.

Urban Running

Running barefoot in a city can be a scary proposition. You might assume the streets are littered with broken glass and hypodermic needles. While there may be some dangerous debris, the fear is often greatly exaggerated. I have personally run in many urban areas around the United States, including Manhattan. Any debris is easily avoided by paying attention to the path immediately ahead. This can be difficult if you're running on crowded sidewalks or at night, when visibility may be reduced. I solve the crowded sidewalk problem by avoiding crowds altogether. If this is impossible, slowing your pace will give you more reaction time to avoid possible dangers. If you're running at night, a flashlight or headlamp will solve visibility issues.

Trail Running

Running on trails is a wonderful experience! Running trails barefoot is an even better treat. There's no greater feeling than the connection to nature you feel running barefoot through the forest. However, running barefoot on trails does require some specific skills. Some people recommend beginning barefoot running on trails for one of two reasons.

First, the relative softness of the terrain is less likely to cause blisters. However, it is also more likely to hide flaws in your form.

Second, some believe avoiding the rough terrain on trails builds skills more quickly. This is not a good reason to start on trails, because always having to avoid rough spots will increase the amount of time needed to find your unique ideal form. Trail running should be considered an advanced form of

barefoot running and should be attempted only after several months of barefoot running.

Running trails requires a few specific skills. First, a runner *must* be adept at forming a mental map of the terrain in front of him. Also, he must have developed the strength and skill to "hop" around. Each foot placement may be a different distance than the last. This results in a very inconsistent gait. Without proper strengthening, it will quickly fatigue the runner. It will also increase the likelihood of injury. The runner should have developed the ability to immediately shift his weight in the event he steps on a sharp object, which he will learn with experience on trails. Finally, the runner has to develop a gait that will allow him to pick up his feet enough to clear the highest obstacles on the trail. All of these trail running skills can be developed in a relatively short time.

To cultivate your trail running skills, it is first necessary to develop good form. Before advancing to this level, you should be able to run several miles pain-free on roads. Then start slowly on trails, beginning with barefoot trail walking. Gradually mix in *very* slow running. As your skills advance, you can increase both pace and distance. Using this formula, it is entirely possible to adapt to running on most terrain.

Running in Heat, Cold, Rain, or Darkness

As you grow more experienced in barefoot running, you may encounter conditions that are less than ideal. For the most part, minimalist runners do not have a major problem with these conditions. In the following paragraphs, I will address some potentially problematic scenarios.

Running in hot weather can be a difficult task for anyone. For the barefoot runner, it poses a special challenge, especially when running on a hot surface. Generally, asphalt is the worst

surface on hot, sunny days. My personal preference is to avoid the heat and run early in the morning or later in the evening.

If you must run on hot asphalt, there is a certain degree of acclimation that can occur.

Start by running *very* short distances on hot asphalt, then slowly increase that distance over the course of several days and weeks. *Caution—do not attempt this if the asphalt is hot enough to burn you!* If you can fry an egg, it's too hot. Either avoid hot asphalt by running in the coolest hours of the day or wear minimalist shoes. Remember this tip: If you are in a pinch and must run on hot asphalt without having acclimated to it, try running on the white line. It will be significantly cooler than the black asphalt. Be careful of traffic, however.

Cold weather presents another problem. If the temperatures are above freezing, it is possible to slowly acclimate. However, the cold will reduce the sensation of your feet on the ground. This results in less feedback to your brain, which could be too much of an injury risk, so I recommend that you wear some type of minimalist shoe to protect yourself.

Early in my barefoot running career, in cold weather I wore aqua socks layered with thermal wool socks underneath. Today, I prefer Merrell Trail Gloves with a pair of Injinji toe socks underneath. In either case, it allows for a decent approximation of barefoot running. During the winter months, I also do limited barefoot running on treadmills to help maintain the "feel" of running barefoot.

Running on ice and snow can help to perfect form, because the slippery conditions require near perfection. Each step must be perfectly placed under your center of gravity. If you have a tendency to overstride or push off, or if you have any other obvious flaws, running on very slippery surfaces will be difficult. If you are running on slippery surfaces, please exercise extreme caution.

Whenever possible, I try to run barefoot indoors. If I cannot

find a location to run indoors, I head outside. I have been experimenting with some barefoot running outdoors in the winter. While running in snow is initially uncomfortable (the cold hurts), my feet do seem to warm up to the point of being able to feel the terrain well enough to navigate fairly technical trails.

Rain is usually not an issue unless you are exposed to it for a long period of time. After a few hours, wet skin tends to become macerated, which greatly increases the likelihood of blistering, so I recommend wearing a minimalist shoe for long distances in the rain. Alternatively, you can counteract the effect if you allow your feet to dry periodically. This can be difficult in a race, but it may be an acceptable solution when training.

Running barefoot in the dark presents the obvious problem of visibility. It will be impossible to see the terrain ahead; therefore, you will not be able to avoid potentially hazardous obstacles. The obvious solution is to use some sort of illumination. When running at night, a combination of a headlamp and handheld flashlight can be very effective.

I prefer to use a handheld flashlight when trail running at night. It allows me to discriminate terrain better than a headlamp. With headlamps, the light source is close to your eyes. It's nearly impossible to see shadows and depth, which makes the terrain appear flat (2-D). With the light source away from your eyes with a handheld flashlight, the depth of shadows allows you to determine the height and shape of obstacles (3-D). Also, the ability to quickly move the light up and down and side to side can eliminate ambiguity. This allows you to create a cognitive map of the terrain, even at night.

If you would prefer to keep your hands free, you could affix the headlamp to your chest or your waist, a common ultrarunner trick. This will help you avoid the problem of poor angles.

If running on roads with little debris, use one or the other. On technical trails, use both at the same time. The more you can illuminate the area ahead of you, the greater your ability to

avoid trouble. Also remember to wear bright, reflective clothing and try to avoid routes with automobile traffic.

WINTER RUNNING, BY BAREFOOT RICK ROEBER

It became a test of my will and body. My barefoot running began in the fall, and it quickly became cold here in the Midwest. However, I was undeterred. Even though it was below freezing many days when I ran, the feedback from my body told me that I was running "right." I felt a gratification after each run that I had not felt before. The blisters, the cold toes, the dry and cracking skin on my feet did not keep me from barefoot running. I would heal up and be right back at it, sometimes in the ice and snow.

I believe that it is possible to run for years and years barefoot, regardless of weather. I don't believe I will ever be incredibly fast at barefoot running, but for me, that's not the point. Longevity, that's what it's all about for me. I would like to, one day, know that I was one of the few who had kept at barefoot running and had set records in most barefoot miles run, most marathons, most 5Ks, or any number of things measurable in the endurance sport of barefoot running. The key is not giving up but continuing to persevere—getting out there daily and running my mileage. I am not looking for "flash in the pan" status because of my barefoot running. I do believe, however, that if I stick with it, the mileage, marathons, endurance running in snow and inclement weather will speak for itself.

Barefoot Rick Roeber, thebarefootrunner.org

(photo courtesy Sharon Bylsma)

Running on snow

The Impossible Terrain: What Cannot Be Conquered Barefoot

I used to believe any surface could be run barefoot if you had adequate training. I thought good running form would negate every potential problem a runner could encounter.

I fell into a classic trap: I took my experiences on roads, sidewalks, and minimally technical trails and generalized those experiences to everything. I'm going out on a limb, but those who believe it's possible to run barefoot anywhere probably haven't actually tried to run barefoot everywhere.

I found I could run on terrain that was initially nearly impossible and that training on that specific terrain eventually led to some level of proficiency. At that point, my "extreme" conditions were limited to gravel roads, chip seal asphalt, what I assumed were rocky trails, and temperatures between forty degrees and about ninety degrees Fahrenheit.

At that point, I started experimenting to see how far I

could push the boundaries in regard to temperature and terrain. I devised a list of variables that determine if any given situation can be tackled barefoot. While individual experiences and abilities vary widely, the premise more or less holds true for all of us.

The more difficult the terrain and extreme the temperature, the more difficult barefoot running becomes. Furthermore, the faster and longer you run on any given surface, the more difficult barefoot running becomes.

Walking or hiking, even on the gnarliest of terrain, is almost always possible. Sprinting, on the other hand, becomes difficult if not impossible on all but the easiest of terrain. The question I'm interested in exploring is: Where is that line between possible and impossible?

We know humans have definite physiological limits. Nobody is bench-pressing five thousand pounds, dunking a basketball on a thirty-foot rim, or running a one-minute mile. I'd call those "hard limits." There are also limits that are just beyond what we're capable of accomplishing, but that we may someday surpass. Bench-pressing twelve hundred pounds, dunking a basketball on a fifteen-foot rim, or running a 3:30 mile *may* be possible someday. Let's call those "soft limits." Barefoot running has definite hard limits, but it also has soft limits. Hard limits cannot be broken. Soft limits can be, with proper training.

The Variables

So what are the exact variables that determine the feasibility of running barefoot?

1. **Speed.** The naked foot is lighter than any shoe, which should allow for slightly greater efficiency, ergo higher speed. On a

smooth surface with no debris to avoid, running barefoot is probably advantageous. If the terrain requires any sort of evasive skill to avoid debris, it is likely shoes will allow you to run faster, because you can run in a straight line instead of dodging debris.

2. **Distance.** Like speed, I don't think distance is limited by being barefoot, as long as terrain is ideal. Shoes over long distances have problems, mostly due to moisture. Bare feet do not have this problem. If the terrain requires any sort of evasive skill to avoid debris, it is likely shoes will allow you to run farther.

3. **Temperature.** I've been able to run several miles at temperatures down to about twenty-four degrees. My upper limit on hot asphalt in the sun is about ninety degrees. I know runners who have successfully run barefoot about ten degrees below and above my own extremes, but I think there are hard limits at both ends. Nobody is running barefoot through Death Valley in July, nor are they running barefoot across Minnesota in February. Run smart—don't injure yourself trying to prove something.

Minimally technical trail

Chip seal asphalt

4. **Terrain.** This is where it gets tricky. Some terrain, like hard, clear surfaces such as asphalt roads or sidewalks, is very easy. Hard-packed dirt trails are easy, too. Clean grassy fields are a piece of cake. Terrain gets a little more difficult if you add some roots or acorns to the trail, move to crushed limestone bike paths, or add rough asphalt such as chip seal. Still, those conditions are easily mastered with training. Gravel roads are probably the next step in the difficulty progression, then snowy or icy roads. Again, training will help you cope with these conditions. The next step up is where real difficulty begins: the introduction of sharp rocks and/or ice. By sharp, I don't mean pointy rocks that make you say ow. I'm talking about stuff that has a pretty good shot at cutting or puncturing you with a sharp edge or point. This is the stuff that will cause physical damage if you touch it with any degree of force. There are several sub-variables to running barefoot on terrain, including vision, feel, and density of obstacles.

- 4a. **Vision.** The ability to see where you're running is important, but not always necessary. With experience, it's possible to run in complete darkness by relying on the ability to feel the ground with each step. This ability decreases with speed and difficulty of terrain. On very technical trails, like the type with the sharp rocks mentioned previously, being able to see is critical. Not only do you have to see where each foot will land; you have to be sure the other foot has a place to land, too. You have to see two steps ahead. If you're wrong about step one and inadvertently step on a sharp rock, you can mitigate the damage by relaxing and taking the pressure off that foot. That requires the other foot to land to maintain balance, which is why you have to make sure that foot has a place to land. If vision is obscured to the point where you

cannot "see" that second step, barefoot running becomes impossible. This may be due to darkness, snow covering hard ice, leaves covering rocks, etc.

As I discussed earlier, I prefer to use a handheld flashlight when running at night. The shadows cast by the handheld allow me to discriminate the height of trail debris with more accuracy than a headlamp.

I also spread my arms when running downhill. If I'm running fast and step on something sharp, the "relax" reflex kicks in and my other foot immediately searches for a landing spot to maintain balance. Since I'm going relatively fast, I'm outrunning my ability to see where the second foot lands. If that foot lands on something sharp, I'm falling. The outstretched arms help me balance, which keeps that fall in the "stumble" category as opposed to the "I'm losing teeth when my head bounces off the ground" category.

Vision is also influenced by sleep deprivation and fatigue. Your brain's ability to interpret the incoming sensory signals decreases, which is what makes barefoot hundred-milers so difficult.

When vision is reduced or eliminated completely, the ability to navigate technical terrain decreases. At some point, barefoot running with limited vision becomes impossible.

- 4b. **Feel.** Ground feel is almost as important as vision. This is the ability to immediately and correctly identify what is underfoot. In many cases, this is an unconscious, reflexive action. The millisecond you step on anything, your feet identify it as something that either causes pain or doesn't. If it's the former, your body reacts by preventing further downward force. If it's the latter, your body continues loading the foot as your weight shifts over that

leg. Also, if landing on an uneven surface, you will know by both the tactile sensation (part of the foot is touching a surface, part is not) and a proprioceptive sensation (foot is inverting, ankle is flexing, etc.). This is what prevents injuries such as sprained ankles and allows you to run fast on uneven surfaces.

Feel is always a tradeoff of wearing shoes. The protection allows you a larger margin of error with foot placement. However, any protection you gain is met with a corresponding loss of tactile and proprioceptive sensation, which often affects running form of barefoot runners. This is the reason shoe selection becomes a tricky proposition—you have to weigh the costs and benefits of an increase in protection versus a decrease in ground feel.

Feel is also influenced by sleep deprivation and fatigue, for the same reason vision is. Visual acuity decreases when you're tired, which makes it more difficult to avoid rocks, roots, and other debris. If you have adequate vision and are well-rested, you can see any potential hazard and can run without any ground feel at all.

- 4c. **Density of obstacle location.** How closely packed obstacles are is more important than the characteristics of the obstacles themselves. I'll use the example of sharp gravel covering an asphalt road. If the gravel is so dense you step on many pieces with each step, barefoot running is relatively easy. You get a "bed of nails" effect, in which many pointy surfaces are contacting your foot at once. The cumulative surface area distributes your weight enough to prevent pain or injury. This is why it's relatively easy to learn to run on chip seal asphalt. Conversely, if the gravel is spread out enough, it's easy to land on the underlying asphalt and avoid the gravel altogether.

Barefoot running becomes difficult when the gravel density is thin enough that you always step on a few noticeable pieces but thick enough to make the gravel impossible to avoid. The same concept holds true for overly technical trails, which I discuss in the next section. Small, sharp rocks usually aren't a problem. Neither are huge rocks. It's the golf-ball- to softball-size sharp rocks that cause problems.

My Real World Experiences

Earlier I mentioned I have tested my own limits extensively. Living in the Midwest, I had ample opportunity to test my own temperature limits, especially on the bottom end. I thought I had tested my trail running limits, too. Once Shelly and I started traveling, I was introduced to terrain that completely reshaped my paradigm of what I thought was possible.

Specifically, I experienced mountain running. It redefined what I considered "technical." As it turns out, Midwest trails are tame. Even the roughest, least barefoot-hospitable Midwest trails pale in comparison to some of the conditions we've found in the mountains. Here are just a few such areas that I would deem barefoot-impossible:

Backcountry mountain trails: The Rockies are aptly named. These trails feature long sections of jagged rocks. To make it more intimidating, the trails are never flat. Even walking barefoot proved to be extremely difficult. I've found similar rocky trails elsewhere, including Bear Mountain, N.Y., rural Virginia and Tennessee, and the Hill Country of Texas.

Mud over granite: We

found these conditions on the Burning River 100 Mile Endurance Run course near Akron, Ohio. The trails feature high-clay-content mud covering sharp, granite-like rocks. Flat ground is okay, because as my foot hit the mud, I was still able to feel the rocks underneath. It was similar to running on snow-covered ice. Hills were impossible, though. My foot would hit the mud, then slip backward or laterally. The slipping would cause my foot to slide along the jagged edge of the rock, which immediately sliced the skin. Laceration city.

Extreme temperatures: Hot temperatures burn; cold temperatures either freeze or kill tactile sensation, which causes lacerations. I know of people (Rick Roeber) who run in temperatures down to the teens and several who go up to the low one hundreds. I think it's safe to say that's pretty close to either limit, especially over any significant distance.

Leaf-covered rocky trails along the Appalachian Mountains: I've encountered this twice—once on the Grindstone 100 course and once in the Smoky Mountains of Tennessee. The rocks are sharp, at a difficult density, and are covered with leaves. They completely eliminate vision, and the rocks are too jagged to rely on feel. Here are some photos from Mount LeConte, south of Gatlinburg, Tenn. The first is the trail covered with leaves. It doesn't look too bad . . .

. . . until you sweep away the leaves and see what's underneath:

Why Bother?

Barefoot running clearly has limitations. So why bother even attempting to traverse difficult terrain? Pushing your limits on this type of terrain will improve your ability to run on any technical terrain, even when wearing shoes. You develop what I refer to as "trail craft," or the ability to use a combination of vision and feel to navigate excessively technical terrain.

Finding the Time to Train

It can be difficult to find the time to train properly. Some recommend a regimented schedule to solve this time-management issue. But for those of us who are less organized, there is a preferred method.

Instead of searching for opportunities to train, turn everything into a training opportunity! One of the best things a new barefoot runner can do is simply spend time moving around the environment barefoot. Whenever you are home, walk around barefoot (that means being sockless). This helps strengthen your feet and hones your tactile sense. Also, it allows you the opportunity to practice walking with a midfoot strike versus a heel strike.

When weather allows (i.e., not in the winter), walk around barefoot outside your house. The concrete sidewalk, asphalt driveway, wood chip landscaping, and grass lawn provide plenty of sensory stimulation for your feet.

You can also casually practice a few of the drills in this book. I routinely pick up debris with my feet. Throughout the course of a day, you will find a plethora of opportunities to test and practice your skills.

Jobs may present a potential difficulty. If your career allows you to go barefoot, indulge! If not, there may be some viable

options. Some people wear only socks. Others wear a minimalist shoe such as one of the Terra Plana, Feelmax, or Vibram models. In the event you are the employer, consider your policy on shoes. You have the power to be an agent of change. Embrace that opportunity!

The Doubtful Spouse/Partner

I am very lucky. Shelly has always accepted and supported my barefoot running endeavors. I would like to believe it is because she instinctively knew I was on the cutting edge of something truly great. In reality, she probably just chalked it up to my eccentric nature.

Regardless, I have benefited from her support. Many of the new barefoot runners I encounter have not enjoyed that level of understanding. Our spouses can be unwavering pillars who help us reach the pinnacle of our potential. They can also be harsh critics who subvert our dreams and ideas. In the event your partner falls in the latter category, there are some tips to help sway her opinion (assuming, of course, that divorce is not an option!).

First, lead by example. If she is a runner, this is will be easy. Do your thing; let her do hers. At some point, she will probably suffer an injury. When she does experience a setback, be sympathetic and then explain why her running shoes may have caused the injury.

Second, educate *yourself* about the merits of barefoot and minimalist shoe running and those of shod running. Both have pros and cons. Learn them and be able to calmly discuss the issues. When your spouse is critical of barefoot running, be able to provide an intelligent response. Aside from the information in this book, study the resources at the end. There are many great websites available.

Third, provide your spouse with information. The best option is obvious—buy him his own copy of this book. If that bit of shameless self-promotion does not work, then try other persuasive sources. Shelly did not start barefoot running until she read *Born to Run.* Chris McDougall's book is an excellent introduction to the fundamental theories that provide the foundation of barefoot running.

If all else fails, just have fun. Barefoot running is an absolute joy. Smile. Laugh. Lose your inhibitions and engross yourself in the experience. That is the single best advertisement for barefoot running.

Dealing with "Hecklers": Common Comebacks

One of the major concerns of new barefoot runners is the fear of being a social outcast. This is a legitimate fear. The general public will likely see barefoot running as absolutely crazy. Despite the increased popularity in recent years, we are still a sizable minority. The public has been fed the shoe company propaganda for years; there is little hope they will have any working knowledge of the benefits of barefoot running.

Other runners present a different problem. In my experience, they can be divided into four categories: recreational, inquisitive, amazed, and hostile runners. Each group is unique, and each requires a slightly different approach.

- *Recreational runners:* This is the fun group. They see barefoot running as superhuman. Running itself is a Herculean task; running barefoot, even more so. This group responds well to the funny comments. When they exclaim, "Look, that guy has no shoes!" simply respond with a funny reply like, "I woke up late and forgot them at home!" Be nice to this group. If they are watching you run, they

have some interest in barefoot running. With encouragement, they could become barefoot runners some day.

- *Inquisitive runners:* This group could be future converts. These are the people who approach you before, during, or after races. They ask questions. They seem interested. Every barefoot runner loves this group; they give us external validation. Always point them toward sources of additional information. Provide them with websites or chat about barefoot theory. (Shameless plug: Recommend they visit barefootrunninguniversity.com—or buy this book!) They will usually have a lot of questions; do your best to answer every one. The goal is to convince these people that barefoot running will work for them.
- *Amazed runners:* This is a strange group. They are generally skeptical about barefoot running but may be interested in the benefits. These are the people who approach you after a race and say, "Wow! I can't believe you just ran that race barefoot!" This group could be future converts as well. First, always act humble. Talk about how lucky you are to have the opportunity to run such a wonderful race. Tell them they did a great job. Be genuinely nice. Never push barefoot running on this group. At the next race, there's a good possibility they will be in the inquisitive group, as long as you don't do anything to turn them off barefoot running. This is why you should *always* remember to smile!
- *Hostile runners:* This is the tough group. They are almost always young males, perhaps middle-aged males. They are passionate about their shoes, which they sincerely believe are the variable that has brought them whatever measure of success they have achieved. There is a tendency to just ignore them. Instead, allow your performances in races to speak for themselves; you don't have to be especially fast. It can be more effective to engage them in

discussion. Self-deprecating humor can be a wonderful tool; it tends to disarm people. Once they see you are a nice person, they generally keep their hostility to themselves. You don't want to convert these people. Your goal is to plant the barefoot seed. It may be several years before they think about barefoot running again, but they will. Maybe they will suffer an injury. Maybe they will read *Born to Run*. Maybe they will have some friends or family who give barefoot running a try. Whatever the case may be, do not antagonize them; you'll only turn them off barefoot running.

As time passes, the acceptance of barefoot running increases. When I first began my barefoot journey, the vast majority of runners were of the hostile variety. Today, most seem to have migrated to the inquisitive camp. Part of this migration is due to the increase in barefoot awareness, and part of it has to do with the quality of the character of barefoot runners. It's important to me to be a good ambassador for barefoot running. Every runner could be a future barefoot runner—and future friend!

Running with Others

One of the joys of running comes from the camaraderie of running with other people. The same holds true for barefoot runners. There are a few issues that arise for barefoot runners, however.

Not everyone is barefoot-friendly. It is important to find a running partner or group that is accepting of your barefoot running adventures. Surrounding yourself with negative input and attitudes will only inhibit and sabotage the process of learning. Some people are very defensive about their decision

to run in shoes. Who can blame them? They probably spend hundreds of dollars per year on shoes.

If you run with an overly negative person, find a new partner. If you run in a group with one or two negative people, simply ignore them. Your successes will provide all the ammunition you need to silence their negativity. It is the best way to counter critics.

Pacing is another issue that sometimes arises when you decide to run with shod runners. It is critically important to restrain yourself early in the learning process. Running with another person who is faster or runs longer distances can dramatically increase the temptation to do too much too soon.

If the other person runs faster, I find a small loop course such as a high school track for runs. This will allow each of you to run at your own pace while still maintaining some contact. If you are running together for security reasons, a loop course works well for this, also.

If the other person runs longer distances, you can do a portion of the run with her. Either she can start earlier or run longer after you finish. You can wait for her as she finishes the remainder of her run.

If your running partners wear traditional running shoes and overstride with a heel strike, they will likely run with a slow cadence. Be careful—you may unconsciously slow your cadence to match theirs. This will result in a host of problems, most of which are related to you overstriding, too.

Bad Runs

A bad run is any run in which something does not feel right. This feeling could manifest itself in a variety of ways. You may feel fatigued. Your feet and legs may feel unusually heavy. You

may have a variety of dull pains throughout your body. You may even feel sleepy.

Runners usually do not talk about bad runs. When I began running, I assumed I was the only one who experienced them. Other runners would gush over how wonderful each and every step felt. It was as if I were the only runner who didn't experience the "muffins wrapped in rainbows" runs everyone else apparently experienced.

Oddly, Shelly and I didn't talk about our experiences with bad runs for years. I think we became adept at sensing when the other was having one, yet we stuck by the runner's code and remained silent.

In 2009, I had the opportunity to listen to a lecture from ultrarunning legend Scott Jurek. I consider Scott to be a role model mostly because of his humble, gracious demeanor. He embodies everything I believe ultrarunning should be. During that lecture, Scott talked about having difficulties during the race. He commented that even the elite runners have moments of extreme self-doubt in which they are tempted to quit.

For me, this was an epiphany. Scott Jurek, one of the best ultrarunners in the world, was talking about bad runs. He talked about the lows we all experience. This opened a floodgate of discussion between Shelly and me. It was as if we had received permission to discuss this frequently occurring phenomenon.

Okay, so we all experience bad runs. It is a malady we will all encounter. How do we deal with the bad run? There are really two options:

Option 1: Stop. Most runners do not find this acceptable, because it is likely to cause guilt or anxiety. We see this option as a personal failure, an admission of weakness. But sometimes, I do stop. After the first mile or two, if it does not feel right, I pull the plug.

Based on past experiences, the negative feelings are usually an indicator of a problem. If that problem is physical in nature, we run a greater risk of injuring ourselves. If I feel I am not "right" physically, I will postpone the run. I may try the same run later in the day, or I may skip it altogether.

Option 2: Fight through it. This is the popular advice most other runners will give. Fighting through adversity is a popular theme in our culture. We've all watched Rocky get punched in the head repeatedly by Apollo Creed and refuse to surrender. Sure, it makes for a good story, but is it smart to get punched in the head two hundred times in one night? Probably not. Similarly, it is not always wise to push yourself when a problem may exist.

Of course, there are times I do push on. Occasionally the desire to run is greater than the negative feelings. If my children are especially challenging on the day of a bad run, I may push through the negativity just for the sake of silence.

If you decide to push on, be careful. Be especially mindful of your physical state. Go a little slower. It may be helpful to eat or drink something. Dehydration or glycogen depletion can be contributing factors to the bad-run feeling. Be prepared to stop the run if your state worsens.

Shelly and I often discuss techniques we use to get through bad runs. Some are psychological trickery; some rely on social pressure. All can be used whenever an additional boost is needed.

Your brain has more power over your physical state than you might realize. The power of positive thought can easily turn a bad run into a good run; it is shockingly effective! I use oft-repeated phrases as positive affirmations:

- I know I am a good runner!
- I've done this run in the past; I can do it again!

- I have felt much worse than this in past runs and still finished!
- I feel great!

All four are a little silly, but *they really do work*. It is not necessary to repeat the mantras aloud, though some prefer to do so. Figure out which works for you, then stick with it.

Introducing social pressure can be another method to overcoming bad runs. If you have other people to run with, their presence may be the subtle push needed to change your mood. The social pressure may come from the desire to avoid disappointing them. Perhaps it is a function of competitiveness. Or you may need to seek distraction from your own negative inner thoughts.

Regardless of your methods, remember to be more vigilant about monitoring your body for injury. This is especially true of running in a social setting. Many of my own injuries have resulted from the stupidity of trying to keep up with a speedy running partner when I was physically ill prepared.

7

Racing

Racing in Vibram KSOs

Once you master good form and develop adequate speed and endurance, you may be tempted to race barefoot. Barefoot racing is a great way to test your abilities and show off your newfound skills. Most of all, it's fun!

Preparation

It is important to train in conditions similar to the race you are planning to run. If the race has hills, train on hills. If the trail has a lot of roots and rocks, train on trails with lots of roots and rocks. This is especially important because you

have to allow your feet to acclimate to the unique challenges you will encounter.

Train in the range of temperatures you may experience on race day. Conduct research to determine the hottest, coldest, and average temperatures. You will use different strategies and wear different clothing depending on the conditions. Be prepared for that variable.

Weight training *really* helps, especially with muscle fatigue and recovery time. Ideally, your weight training routine should prepare you for the specific conditions you will experience when running long distances. See the training plans in chapter 8.

Rest and recovery are the most important components to any training program. Training takes a toll on your body. Rest days are necessary to allow your body to heal. As someone more knowledgeable than I once said, "Being underprepared is better than being overtrained."

Practice dealing with issues that may arise (blisters, chafing, nausea, etc.). This will help you confront them if they arise on the run. The best way to practice is to experience these issues in your training runs. I purposely avoid using anti-chafing lubrication, run faster than I should, and even eat a large fast-food meal prior to a run. The point is to artificially create problems that must be solved on the fly. When presented with those same problems during a run, I have practiced the solutions. For example, when I develop a blister on a training run, I'm forced to fix it on the spot. Practicing that skill saves significant time when I have to repair a blister in a race.

Have a plan for these and other potential problems (bugs, rain, diarrhea, etc.) going into a race. It may help prevent a did not finish (DNF). This plan should be developed based on your experiences while training.

Test *a lot* of different foods, gels, and sport drinks to find what works for you. After the miles start to pile up, you may

find some foods more palatable than others. I love sweet foods early in a race, but cannot tolerate them after about twenty miles. My go-to food when all else fails is chia seeds taken with water or diluted wine. It is an odd combination, but it works well.

When going barefoot or wearing minimalist shoes, you should know the course prior to training runs. If you cannot run the course prior to the race, try to get reports from other barefoot runners.

In any race, it is important to know your limitations. If you have a goal time over any given distance, be sure you have trained for that particular pace. Also, remember to maintain good form throughout. In the heat of competition, it is easy to allow your form to suffer. I have been guilty of pushing myself harder than I should have, and injuries have resulted.

In regard to competition, it is always good to compete against yourself. Set goals and always strive for self-improvement. However, do not get caught up in beating those around you. All too often, we get swept up in what others are doing. We lose sight of what made running fun in the first place. If winning is important to you, strive to be the best you can be. If that results in your beating others, so be it. Allow victory to be a nice by-product of accomplishing your own goals.

Test all of your gear prior to the race. This includes clothing, anti-chafing and anti-blister measures, shoes (for you Luddites who insist on wearing them), hydration systems, and food. Everything you rely on for a race is a potential problem. The more familiar you are with each variable, the less likely it is to become a problem. Be prepared if gear breaks, gets lost, or is ineffective. Have a contingency plan for everything.

One of the best ways to prepare for running any race is to volunteer. Local races are always in need of eager, enthusiastic volunteers to help set up, work an aid station, or act as a course

marshal to keep the runners on the course. Watching other runners can be an invaluable learning experience.

One ever-important thing to remember: As a runner, *always* thank all volunteers. They are sacrificing their time for you. Show your appreciation. Do not complain or scold them. You are representing barefoot runners—we are supposed to be having fun out there. Represent us well!

One of the most common questions new barefoot runners ask when jumping to organized racing is where to attach the timing chip used to measure your finish time. I use an elastic MP3 player armband around my ankle. The timing chip is attached to that (see picture below). Some people use triathlon straps, which are designed to hold timing chips on the leg during the swim portion of the event. Still others duct-tape the chip to top of their foot. Use your imagination!

Enjoy running for the sake of running, not the rewards of winning a race. As George Sheehan says, "Once you have decided that winning isn't everything, you become a winner." This is the secret to longevity in running. You will never burn out if you love the process instead of the outcome.

Leg band for timing chip worn in a race

Ultramarathons: Testing Human Potential

"Perhaps the genius of ultrarunning is its supreme lack of utility. It makes no sense in a world of spaceships and supercomputers to run vast distances on foot. There is no money in it and no fame, frequently not even the approval of peers. But as poets, apostles, and

philosophers have insisted since the dawn of time, there is more to life than logic and common sense. The ultrarunners know this instinctively. And they know something else that is lost on the sedentary. They understand, perhaps better than anyone, that the doors to the spirit will swing open with physical effort. In running such long and taxing distances they answer a call from the deepest realms of their being—a call that asks who they are."

DAVID BLAIKIE

Ultramarathons represent the extreme of human running ability. In their 2004 *Nature* article, Drs. Dennis Bramble and Daniel Lieberman presented a convincing theory that humans evolved to run long distances based on unique anatomical and physiological traits. This article was one of the influential pieces featured in McDougall's *Born to Run*. Ultramarathons are the ultimate test of our unique abilities.

An ultramarathon is officially defined as any distance greater than the standard 26.2-mile marathon. Popular races include 50K, 50-mile, 100K, and 100-mile distances. It is entirely possible to reach these distances both in minimalist shoes and barefoot. I fell in love with ultras immediately. The sense of camaraderie among ultrarunners is second to none. Should you decide to try these events, some of these tips may be useful.

This section may seem a bit out of place, especially since I've spent the early pages urging you to be patient. Ultramarathons are events that should be attempted only after significant training and ample transition time. I have added this section for two reasons: First, many of the lessons I've learned from ultras can be applied to any running situation. Second, the open, accepting atmosphere of ultras tends to be very similar to that of the barefoot running community.

Ultramarathon Race Day Strategy

Start slow! The greatest mistake you can make is to start too fast, then bonk later in the race. There are different strategies people use for ultras. Some run at a slow, steady pace as long as possible. Others schedule regular walking breaks.

Walk all hills. This is a good opportunity to change your stride, which helps distribute fatigue. Running hills, especially early in a race, is a recipe for disaster. Running uphill requires a significant increase in energy expenditure, and energy stores should be conserved for the latter stages of a race.

Eat early and often. Adequate caloric intake will help later in the race. Different runners can tolerate more or less food. The average seems to be around 250 calories per hour. In some races, I consume upwards of 450 calories per hour.

Stay adequately hydrated. You should know how much you need to drink based on training. I also use urine frequency and color as a gauge. If I am urinating more than once every ninety minutes, I am drinking too much. If my urine is very yellow or dark, I am drinking too little.

Keep your electrolyte intake balanced with your fluid intake. Consuming too much salt usually causes gastrointestinal distress; consuming too little can cause hyponatremia, which is potentially fatal. I prefer an electrolyte supplement like Succeed S!Caps.

Any area that protrudes or experiences some friction can chafe. This includes thighs, groin, toes, armpits, nipples, and butt crack. Chafing can be difficult because you may not recognize it until it has already developed. Find a good anti-chafing product. Sportslick, Bodyglide, and Sportwax are good products. If you do develop chafing, diaper rash cream is an effective remedy.

Practice using nature as a restroom. Reliving yourself in

the woods, while not complicated, should be practiced. No details needed here.

Running ultras usually involves some degree of pain. Learn to manage it without drugs. Both ibuprofen and acetaminophen can result in acute health trouble mostly related to acute kidney and liver damage, respectively. Repeating a positive mantra like "I feel great!" can be a very effective distraction.

Finally, taper! Tapering is the progressive cessation of activity to allow your body to heal. Give yourself *at least* a few days off prior to your race. I start decreasing the intensity of my workouts at least two weeks (for fifty-milers) up to three weeks (for hundred-milers) prior to my goal race, including one week of near-zero mileage immediately before the race. This ensures that I will be healthy and injury-free at the start of the race.

Crewing and Pacing

Serving as a crew member or pacer can also be a beneficial method of learning about ultras. Crew members meet runners at various points during the run. Their job is to resupply their runners and help solve problems that may arise. Pacers actually run with their runner for parts of the race, keeping the runner on pace to finish, providing motivation, finding the trail, or performing any other task the runner is incapable of doing on his or her own.

Diet and Race Food

I sometimes get questions about my diet. It can be summed up in two words: *variety* and *moderation*.

I try to eat many different foods. When shopping at the grocery store, I use a simple guideline: Buy foods found on the

perimeter of the store and of a variety of colors. This ensures two things. First, food found on the perimeter of most stores will be fresh. Fruits, vegetables, meat, dairy, and bread are found in these areas. The middle aisles contain the processed foods such as canned vegetables, cookies, and potted meat. Anything that is prepared via the potted method reeks of unhealthiness.

I am a food realist. As much as I would like to claim to adhere to a healthy diet, it would be a lie. I like food. I like healthy food. I also like unhealthy food. If I have an urge to eat anything, I will usually indulge. Moderation is important when satisfying these urges. If I am eating an unhealthy food, I will limit my consumption to a portion no larger than my fist. It is a simple but direct method of portion control.

I also look for patterns of times when I tend to overeat. I am an emotional eater. If I am experiencing an unusual level of stress, I have a tendency to overeat. I also overeat if I am bored. The trick to preventing or minimizing overeating is to understand, predict, and correct the triggers that cause it. If I keep myself busy, drink water, and exercise, I can greatly limit my overeating.

During races, I tend to favor high-calorie foods. I shy away from the engineered foods many runners use, such as gels. Through experimentation, I have found that foods such as hot dogs, hamburgers, and doughnuts work well. It is not a popular strategy, but it works for me. On longer runs, I find the sweetness of most gels is unpalatable. The foods are much easier to eat, especially when I've practiced ingesting them on long training runs.

Iskiate

In *Born to Run*, Chris McDougall discusses the habits of the Tarahumara Indians of Copper Canyon, Mexico. One of the staples of the Tarahumara is chia seeds mixed with water and

a hint of lime juice. The resulting "iskiate" is renowned for its usefulness as a mid-run fuel.

I was skeptical of this concoction until I was forced to try it at the 2009 Hallucination 100 Mile run. The other foods I had planned on consuming made me nauseated. Since then, I have experimented with various methods to ingest chia while running. At some point in my research, my friends Andy Grosvenor and Kate Kift suggested using wine instead of water as a liquid base for the iskiate.

In May 2010, I decided to try this combination for the Mind the Ducks 12-Hour ultramarathon in Rochester, N.Y. I was only able to procure Mike's Hard Lemonade, a carbonated malt beverage.

Throughout the race, I used a combination of Mike's and chia to maintain adequate caloric intake. I would pour about two ounces of Mike's into a cup, drop in a scoop of chia seeds, and immediately drink it. I did this routine about once every hour.

The use of a small amount of alcohol during a long run is very controversial. I have not tested this concept extensively, but I did feel it gave me *some* positive benefits. It alleviated some of the pain and helped me stay relaxed.

Approaching People from Behind

Barefoot runners are quiet. At least, we *should* be quiet. I have actually gotten close enough to a deer to reach out and touch it. I was tempted, but the taxidermist was giving me a suspicious look.

Anyway, approaching people from behind can be problematic. They do not hear us. If we just run past them, it will seem as if we materialized from nothingness. This will probably startle them. In keeping with the theme of being a

good ambassador for barefoot running, I suggest you do something to warn the unsuspecting people.

I've heard dozens of suggestions, like attaching bells to your shorts, carrying a boom box (for my 1980s cohorts), or simply singing show tunes (a technique my friend Stuart has mastered; you will read about him in the Hallucination 100 Mile race report). A more practical solution is to simply call out a friendly hello or the slightly less friendly "Runner passing on the left!" If you are not comfortable with verbalizing your presence, a loud, well-timed cough will serve the purpose.

Training barefoot has allowed my body to become more efficient. When running fifty or a hundred miles, wasting energy with improper form can add hours to your finishing time and, worse yet, cause serious injury. Barefoot running is an invaluable tool for learning to run the way our bodies have evolved to function.

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ONE GIRL'S DECISION TO DITCH HER SHOES

Two years ago, I had no idea what it would mean to ditch my shoes. I didn't know all the changes that were to come. I would like to think they were a result of the decision to go barefoot.

I started out running barefoot but prefer to run in minimalist shoes. I like running rugged terrain, and for me that requires some protection.

I grew up in a reserved family. I would call it repressed if I were to be truly accurate. I was taught not to adorn myself with jewelry and makeup. I needed to dress in a conservative manner and was told that I should always worry about how I'm representing myself to the world. I became someone who obsessively worried about what others thought. I didn't say what I wanted to say because I had to be careful of offending someone. I didn't dress in the manner I would have liked to because you don't want to bring unwanted attention to yourself. My clothing choices couldn't be too baggy, yet they couldn't be too tight, either.

By taking off my shoes I was inviting people to ask me questions. Being the center of attention made me uncomfortable. After a few runs I got used to the looks and questions and even welcomed them.

My running clothes of choice were big, unflattering, and mostly black. I thought I could make myself more invisible by dressing all in one color. I could blend into the crowd. I always admired people who could dress up in costume. They weren't afraid to be silly and didn't mind attention. I told myself I was going to be that person one day.

Slowly, I changed my running clothes. It started with a running skirt (black, of course) and eventually changed into bright

(mostly pink) colors. Instead of worrying about what others thought, I started to dress how I wanted to dress. At first it was a mental checklist I would go through. I would ask myself, "What does it matter if a stranger doesn't like what I'm wearing? If they don't like it, perhaps that's a reflection of their inability to dress how they want. Does it matter what this person who doesn't know me thinks of me?"

By going through my checklist I realized I didn't care what others thought of me. It was a liberating feeling. Eventually I ran a costume race and went on to run others.

I decided I was going to take risks in the races I ran. My first big risk was signing up for a twelve-hour ultramarathon. I would run as far as I could in that twelve-hour time limit. It scared me to think about running for that amount of time, but I was going to do it regardless. That decision was one of the best I've ever made. I made friendships that will last a lifetime, I learned I could push myself, and I finished with forty miles under my belt. Like other facets of my life, I realized I'd been the one holding myself back.

I signed up for my first trail marathon. Within twelve months I completed five more marathons. I attempted my first 50K in December 2010 and didn't finish. Instead of beating myself up, I learned that cold weather is my kryptonite. I went on to complete my first fifty-miler, which was actually fifty-four miles, because I went off course. I learned I could persevere in a race I was convinced I wasn't going to finish. If you had told me two years ago this was all in store for me I would have laughed and laughed.

This led to me taking a closer look at the decisions I had been making in my personal relationships. I liked my newfound ability to be myself and not care what others thought. I wanted to sur-

round myself with like-minded individuals, and for the most part I did. However, there were a few friendships that appeared strong but were actually draining and one-sided. I was letting the few benefits I got from the relationship distract me from the reality that not all friendships are healthy. I had to make some tough decisions, which ultimately were the best choices for me. They were very hard choices, but in the end they led me to open myself to new relationships. In the past I would have closed myself off to those relationships.

Reevaluating my relationships also led to taking a closer look at other decisions, like our careers. Jason and I began to questions our choices. We were both high school teachers but were restless and wanted to do something else. We also wanted to travel, but we kept coming up with a million reasons why we should stay in our relatively safe jobs and not take risks and do what we really wanted.

We finally decided that we were going to quit our jobs at the end of the year and travel with our three kids. Initially, we weren't sure exactly how this would all come together. Our plan was to pay off our debts, get rid of material possessions we wouldn't be taking with us, and figure out the details over the remaining eight months of the school year.

We should have been scared out of our minds. Instead we were oddly calm. It probably sounds glib to say that things just fell into place, but that's exactly what happened. One decision led to the next. We were taking a risk, but I found risks weren't something to be feared. Every risk I had taken, whether successful or not, was something that ultimately led to better things.

You're probably wondering what this has to do with barefoot and minimalist shoe running. For me, making that one decision

several years ago was much more powerful than I realized at the time. It pushed me outside my comfort zone. It forced me to confront my own fears and anxieties, which made me a better, stronger person. It led me to be myself and not care what others think. It led me to take risks and gave me the ability to travel with my family. It gave me the ability to run in spectacular places. It led me to quality friendships. It led me to a stronger relationship with Jason.

I no longer put restrictions on my abilities. Instead I think, "Why not?"

Shelly Robillard
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Ten Barefoot Running Tips

1. A necklace can be a handy training tool. As you run, the necklace should remain more or less stationary around your neck. If it bounces up and down, you are probably overstriding. If it sways from side to side, your upper body is moving too much or your arms are moving across your body.

2. If you are running on an asphalt road that is too rough, running on the painted white line will often be smoother. As mentioned earlier, the lines can also be cooler in hot weather.

3. Carrying a foot-care kit can be helpful should you injure yourself. My kit includes alcohol wipes for sterilization, tweezers for removing slivers or thorns, two adhesive bandages, and superglue to apply to minor cuts.

4. If running with children in a jogging stroller, stand toward one side so you can see debris in your path. For example, stand behind and to the left of the stroller while pushing with your right arm. This will give you an unobstructed view of the path to the left of the stroller.

5. Running across a patch of sand can help you determine if you are running with good form. If your footprint is almost perfectly flat, you are effectively lifting your foot (this is good). If there is a divot at the front of your foot, you are pushing off with your toes (this is bad). If you create a divot at the back of the track, that indicates excessive heel striking (this is also bad).

6. If you find yourself overanalyzing your form, do something to distract yourself. I prefer to eat. Small candy works well. Other options include listening to music, running with a partner and engaging in conversation, and running with a dog.

7. When you're running on a flat surface for a long time, the repetitive motions can cause the same muscles to work repeatedly. This will apply the same stress to bones, tendons, ligaments, etc. This leads to premature fatigue or a greater risk of injury. Doing anything to add variety, if only for a few minutes, can be very useful. Try running through a short section of grass along sidewalks, running on the gravel on the side of an asphalt road, or even jumping on or over obstacles along your path.

8. When you run in cold temperatures, your feet will lose sensation. Most people will regain sensation as blood flow increases later in the run. To help speed the warm-up process, make sure you dress in warm clothing. Long pants work much better than shorts. Also, your feet will stay warmer as long as you are moving. Avoid stopping.

9. If you ever have to enter a store barefoot and it has a "no barefoot" policy, act as if you're wearing shoes. If you're walking with confidence, few people will notice. Those who do notice will be unlikely to confront you if you act as if you are doing nothing wrong. In the unlikely event a store employee does stop you, use my favorite excuse:

   Store employee: "Sir, you need to wear shoes in this store."
   Me: "I know, I had a pair of sandals [or flip-flops or any other similar shoe] and they broke. Can you direct me to the [name anything in the store] section?"

You provide a reason for your "dilemma" and then reframe the situation to remind the employee that you are a customer.

10. This one is a bit radical. For those of you who have to wear shoes in the winter, your feet will lose some of their adaptation to walking and running over rough terrain. You can maintain some degree of adaptation by adding a tablespoon of fine gravel or kitty litter to your shoes. The technique is more effective without socks. When spring comes, you'll regain your "summer feet" much quicker.

8

Training Plans

Once you complete each of the stages covered in this book, you will be free to run faster and longer. Many run races as a means of increasing their abilities. To help you achieve your running goals, I am including several of my own plans.

Please do not start any of these plans until you can run barefoot pain-free. I often recommend new barefoot runners avoid running on back-to-back days; however, these plans will require running several days in a row. Because of this, you should exercise caution to avoid injury. If you do experience pain, take a day off. It is better to be undertrained at the starting line of a race than to be sitting on the sidelines with an injury. I am not nor have I ever been an elite runner. I am a recreational runner. All of these plans are developed for recreational runners. If high performance is your primary goal, seek

the assistance of a qualified running coach. They can be found via Road Runners Club of America (rrca.org) or USA Track & Field (usatf.org).

For each plan, there are different types of workouts. I wrote the plans using the terminology used by most training plans. If you are a new runner, please don't be intimidated by the lingo. The concepts are pretty basic. The workouts are as follows:

- *Repeats:* A repeat is a very fast run (near-sprint) over a very short distance (several hundred meters) in order to build speed. When doing repeats, you should *not* be able to hold a conversation. Repeats are expressed as A x B, where A is the number of times you run and B is the distance you run. Generally, I rest one minute between each repeat. When running repeats barefoot, it is important not to increase your pace more than fifteen seconds per mile per week. This will help ensure you remain injury-free. If you begin developing blisters, you are going too fast for your current skill level.
- *Tempo run:* A tempo run is slower than repeats, but still a fast run (10K pace, which is also the point where conversation becomes difficult to maintain). Talking during a tempo run should be difficult but possible. Most of my conversations consist of a series of indecipherable sounds. Because the purpose is to build speed over longer distances, a tempo run will cover a longer distance than repeats (several miles versus several hundred meters). When doing tempo runs barefoot, it is important never to increase your pace more than fifteen seconds per mile per week. Again, injury prevention is the goal.
- *Fartlek run:* As discussed in chapter 4, a fartlek run is a type of interval training, with varying speeds and dis-

tances. I vary the pace from a sprint to a walk and everywhere in between. I like fartlek runs because they add an element of variety. Same deal as repeats and tempo runs: Don't increase pace too fast.

- *Long run:* The long run is a slow-paced run over a long distance. The pace should be slow enough to allow you to easily hold a conversation. Long runs help to build endurance.
- *Hill repeats:* Hill repeats are simple—you run up and down a hill. I usually run up the hill with as much effort as I can muster. It is not uncommon for me to walk up the last few hills as fatigue sets in. This workout will build muscles, help develop hill running technique, and possibly improve speed. The hills I use are sand dunes, stairs, or a local Midwestern ski hill. Pretty much any sort of hill will work. Hill repeats are expressed as Z , where Z is the number of times you run up *and* down the hill. Generally, I rest one minute between each repeat.
- *Cross-training:* Cross-training includes any non-running activity. Some people use swimming, biking, yoga, martial arts, or playing an active sport (croquet and bowling don't count).
- For the more adventurous adult readers, some people have been known to use sexual activity as cross-training. My suggestion: Purchase a good Kama Sutra book and enjoy! In the likely event your partner is not convinced, just use the always effective "But, honey, I'm *training*!"

Many of the workouts have a specific distance recommendation. There are a variety of methods used to track distances. I used to drive around in a car and use the odometer, but the local high school track team complained my car took up too much of the track. I then used a good map website (gmappedometer.com). The mapping website allows you to trace your

running route to determine the exact distances. Finally, I took the plunge and purchased a GPS watch. This turned out to be one of the best running purchases I've made.

5K Plan

This plan is designed as a first step after learning good running form. At this point, you should be able to run at least two or three miles barefoot without pain. The 5K Plan will begin introducing speed to your workout.

The plan is designed to help you complete a 5K (3.1-mile) race. At the conclusion of this plan, you should be able to easily complete a 5K race barefoot or in minimalist shoes.

WEEK 1

- Sunday—Rest day
- Monday—Tempo run, 1 mile
- Tuesday—Cross-training
- Wednesday—Repeats, 2 x 400 meters
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 2.25 miles

WEEK 2

- Sunday—Rest day
- Monday—Tempo run, 1.25 miles
- Tuesday—Cross-training
- Wednesday—Hill repeats, 2
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 2.5 miles

WEEK 3

- Sunday—Rest day
- Monday—Tempo run, 1.5 miles
- Tuesday—Cross-training
- Wednesday—Fartlek run, 1.5 miles
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 2.75 miles

WEEK 4

- Sunday—Rest day
- Monday—Tempo run, 1.75 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 4 x 400 meters
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 3 miles

WEEK 5

- Sunday—Rest day
- Monday—Tempo run, 2 miles
- Tuesday—Cross-training
- Wednesday—Hill repeats, 4
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 3.25 miles

WEEK 6

- Sunday—Rest day
- Monday—Tempo run, 2.25 miles
- Tuesday—Cross-training

- Wednesday—Fartlek run, 1.75 miles
- Thursday—Rest day (taper)
- Friday—Rest day (taper)
- Saturday—RACE DAY!

10K Plan

The 10K Plan is intended to follow the 5K Plan. It uses the exact same principles, with added distances. If you are new to running, it would be best to go through the 5K Plan first. The 10K assumes you're comfortable running about three to four miles.

WEEK 1

- Sunday—Rest day
- Monday—Tempo run, 1.5 miles
- Tuesday—Cross-training
- Wednesday—Hill repeats, 3
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 3.5 miles

WEEK 2

- Sunday—Rest day
- Monday—Fartlek run, 1.75 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 3 x 400 meters
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 4 miles

WEEK 3

- Sunday—Rest day
- Monday—Tempo run, 2 miles

- Tuesday—Cross-training
- Wednesday—Hill repeats, 4
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 4.5 miles

WEEK 4

- Sunday—Rest day
- Monday—Fartlek run, 2.25 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 4 x 400 meters
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 5 miles

WEEK 5

- Sunday—Rest day
- Monday—Tempo run, 2.5 miles
- Tuesday—Cross-training
- Wednesday—Hill repeats, 5
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 5.5 miles

WEEK 6

- Sunday—Rest day
- Monday—Fartlek run, 2.75 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 5 x 400 meters
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 6 miles

WEEK 7

- Sunday—Rest day
- Monday—Tempo run, 3 miles
- Tuesday—Cross-training
- Wednesday—Hill repeats, 6
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 6.5 miles

WEEK 8

- Sunday—Rest day
- Monday—Fartlek run, 3.25 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 6 x 400 meters
- Thursday—Rest day (taper)
- Friday—Rest day (taper)
- Saturday—RACE DAY!

Half Marathon Plan

Moving up to the half marathon distance (13.1 miles) requires the introduction of another training concept: rest weeks. When my training volume begins to increase, I train hard for three weeks and then schedule an easy week. The purpose is to allow your body to recover. This twelve-week plan assumes you can run five or six miles comfortably.

WEEK 1

- Sunday—Rest day
- Monday—Tempo run, 2.5 miles
- Tuesday—Cross-training

- Wednesday—Hill repeats, 5
- Thursday—Cross-training
- Friday—Fartlek run, 2.5 miles
- Saturday—Long run, 5 miles

WEEK 2

- Sunday—Rest day
- Monday—Repeats, 6 x 400 meters
- Tuesday—Cross-training
- Wednesday—Tempo run, 2.75 miles
- Thursday—Cross-training
- Friday—Hill repeats, 6
- Saturday—Long run, 6 miles

WEEK 3

- Sunday—Rest day
- Monday—Fartlek run, 3 miles
- Tuesday—Repeats, 7 x 400 meters
- Wednesday—Cross-training
- Thursday—Tempo run, 3 miles
- Friday—Cross-training
- Saturday—Long run, 7 miles

WEEK 4 (REST WEEK)

- Sunday—Rest day
- Monday—Hill repeats, 3
- Tuesday—Cross-training
- Wednesday—Fartlek run, 2 miles
- Thursday—Cross-training
- Friday—Rest day
- Saturday—Long run, 5 miles

WEEK 5

- Sunday—Rest day
- Monday—Tempo run, 3.25 miles
- Tuesday—Hill repeats, 7
- Wednesday—Cross-training
- Thursday—Fartlek run, 3.25 miles
- Friday—Cross-training
- Saturday—Long run, 8 miles

WEEK 6

- Sunday—Rest day
- Monday—Repeats, 8 x 400 meters
- Tuesday—Cross-training
- Wednesday—Tempo run, 3.5 miles
- Thursday—Cross-training
- Friday—Hill repeats, 8
- Saturday—Long run, 9 miles

WEEK 7

- Sunday—Rest day
- Monday—Fartlek run, 3.75 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 9 x 400 meters
- Thursday—Cross-training
- Friday—Tempo run, 3.75 miles
- Saturday—Long run, 10 miles

WEEK 8 (REST WEEK)

- Sunday—Rest day
- Monday—Hill repeats, 6
- Tuesday—Cross-training
- Wednesday—Fartlek run, 2 miles
- Thursday—Repeats, 6 x 400 meters

- Friday—Cross-training
- Saturday—Long run, 8 miles

WEEK 9

- Sunday—Rest day
- Monday—Tempo run, 4 miles
- Tuesday—Hill repeats, 10
- Wednesday—Cross-training
- Thursday—Fartlek run, 4 miles
- Friday—Cross-training
- Saturday—Long run, 11 miles

WEEK 10

- Sunday—Rest day
- Monday—Repeats, 12 x 400 meters
- Tuesday—Cross-training
- Wednesday—Tempo run, 4.25 miles
- Thursday—Cross-training
- Friday—Hill repeats, 12
- Saturday—Long run, 12 miles

WEEK 11

- Sunday—Rest day
- Monday—Fartlek run, 4.5 miles
- Tuesday—Repeats, 13 x 400 meters
- Wednesday—Cross-training
- Thursday—Tempo run, 4.5 miles
- Friday—Cross-training
- Saturday—Long run, 13 miles

WEEK 12

- Sunday—Rest day (taper)
- Monday—Fartlek run, 4.75 miles

- Tuesday—Rest day (taper)
- Wednesday—Repeats, 6 x 400 meters
- Thursday—Rest day (taper)
- Friday—Rest day (taper)
- Saturday—RACE DAY!

Marathon Plan

This twenty-week plan will allow you to finish a marathon. When training for the marathon distance (26.2 miles), the same basic principles apply. The addition of rest days allows your body to recuperate.

The five types of runs train your body for the rigors of running a marathon. The long run becomes increasingly important. Use it to test things such as clothing, gear, pre-race meals, and hydration strategies. Like the Half Marathon Plan, this plan assumes you can comfortably run about five or six miles.

WEEK 1

- Sunday—Rest day
- Monday—Fartlek run, 2 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 6 x 400 meters
- Thursday—Tempo run, 2 miles
- Friday—Cross-training
- Saturday—Long run, 5 miles

WEEK 2

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Hill repeats, 7

- Wednesday—Fartlek run, 2.25 miles
- Thursday—Cross-training
- Friday—Repeats, 7 x 400 meters
- Saturday—Long run, 6 miles

WEEK 3

- Sunday—Rest day
- Monday—Tempo run, 2 miles
- Tuesday—Cross-training
- Wednesday—Hill repeats, 8
- Thursday—Rest
- Friday—Cross-training
- Saturday—Long run, 7 miles

WEEK 4

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Fartlek run, 2.75 miles
- Wednesday—Repeats, 9 x 400 meters
- Thursday—Cross-training
- Friday—Tempo run, 2.75 miles
- Saturday—Long run, 8 miles

WEEK 5

- Sunday—Rest day
- Monday—Hill repeats, 10
- Tuesday—Cross-training
- Wednesday—Fartlek run, 3 miles
- Thursday—Repeats, 10 x 400 meters
- Friday—Cross-training
- Saturday—Long run, 9 miles

WEEK 6

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Tempo run, 3.25 miles
- Wednesday—Hill repeats, 11
- Thursday—Cross-training
- Friday—Fartlek run, 3.25 miles
- Saturday—Long run, 10 miles

WEEK 7 (REST WEEK)

- Sunday—Rest day
- Monday—Repeats, 6 x 400 meters
- Tuesday—Rest day
- Wednesday—Tempo run, 2 miles
- Thursday—Rest day
- Friday—Cross-training
- Saturday—Long run, 6 miles

WEEK 8

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Hill repeats, 12
- Wednesday—Fartlek run, 3.5 miles
- Thursday—Cross-training
- Friday—Repeats, 12 x 400 meters
- Saturday—Long run, 11 miles

WEEK 9

- Sunday—Rest day
- Monday—Tempo run, 3.75 miles
- Tuesday—Cross-training

- Wednesday—Hill repeats, 13
- Thursday—Fartlek run, 3.75 miles
- Friday—Cross-training
- Saturday—Long run, 13 miles

WEEK 10

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Fatlek run, 4 miles
- Wednesday—Repeats, 14 x 400 meters
- Thursday—Cross-training
- Friday—Tempo run, 4 miles
- Saturday—Long run, 15 miles

WEEK 11 (REST WEEK)

- Sunday—Rest day
- Monday—Hill repeats, 6
- Tuesday—Rest day
- Wednesday—Fartlek run, 2 miles
- Thursday—Rest day
- Friday—Cross-training
- Saturday—Long run, 8 miles

WEEK 12

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Repeats, 15 x 400 meters
- Wednesday—Tempo run, 4.25 miles
- Thursday—Cross-training
- Friday—Hill repeats, 15
- Saturday—Long run, 17 miles

WEEK 13

- Sunday—Rest day
- Monday—Fartlek run, 4.5 miles
- Tuesday—Cross-training
- Wednesday—Repeats, 16 x 400 meters
- Thursday—Tempo run, 4.5 miles
- Friday—Cross-training
- Saturday—Long run, 19 miles

WEEK 14

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Hill repeats, 16 x 400 meters
- Wednesday—Fartlek run, 4.75 miles
- Thursday—Cross-training
- Friday—Repeats, 16 x 400 meters
- Saturday—Long run, 21 miles

WEEK 15 (REST WEEK)

- Sunday—Rest day
- Monday—Tempo run, 2 miles
- Tuesday—Rest day
- Wednesday—Hill repeats, 6
- Thursday—Rest day
- Friday—Cross-training
- Saturday—Long run, 10 miles

WEEK 16

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Fartlek run, 5 miles

- Wednesday—Repeats, 16 x 400 meters
- Thursday—Cross-training
- Friday—Tempo run, 5 miles
- Saturday—Long run, 23 miles

WEEK 17

- Sunday—Rest day
- Monday—Hill repeats, 16
- Tuesday—Cross-training
- Wednesday—Fartlek run, 5.25 miles
- Thursday—Hill repeats, 16
- Friday—Cross-training
- Saturday—Long run, 25 miles

WEEK 18

- Sunday—Rest day
- Monday—Cross-training
- Tuesday—Tempo run, 5.5 miles
- Wednesday—Hill repeats, 16
- Thursday—Cross-training
- Friday—Fartlek run, 5.5 miles
- Saturday—Long run, 28 miles

WEEK 19

- Sunday—Rest day
- Monday—Repeats, 16 x 400 meters
- Tuesday—Cross-training
- Wednesday—Tempo run, 5.75 miles
- Thursday—Hill repeats, 16
- Friday—Cross-training
- Saturday—Long run, 15 miles

WEEK 20

- Sunday—Rest day
- Monday—Rest day
- Tuesday—Repeats, 6 x 400 meters
- Wednesday—Rest day (taper)
- Thursday—Rest day (taper)
- Friday—Rest day (taper)
- Saturday—RACE DAY!

9

Cross-training

The Barefoot Workout

> *"Everyone is an athlete. The only difference is that some of us are in training, and some are not."*
>
> GEORGE SHEEHAN

Cross-training will strengthen muscle groups that are not activated when solely running. This helps achieve muscular balance, which helps prevent injury and decrease recovery time. Some runners cross-train by riding bikes, swimming, participating in yoga or Pilates, or doing a myriad of other activities. The idea is to engage your body in different movements. Including variety will help maintain and strengthen those body parts that are not engaged while running. This will help promote resilience to injury, increase recovery time, and ultimately increase overall running

performance. The workout suggested in this section is just one of many that will have a positive impact on all runners, barefoot or otherwise.

Here are the guiding principles for the Barefoot Workout:

High Intensity Workouts Produce Better Results

Workouts should leave you feeling physically exhausted and covered in sweat. This is not a "country club" workout.

All Exercises Should Promote Strength Across Multiple Planes

Most exercises require coordination and balance (thus, work) and build all the stabilizer muscles throughout your body. This also works your core muscles, which are critical to running. I avoid most exercises that allow only a single plane of motion (Nautilus machines, etc.).

Variety Is Essential

In any given week, I may do twenty to sixty *different* exercises. This ensures that all muscle groups are used. Based on my experiences, variety is the best possible weight training method for running.

Many of my exercises and theories about weight training were developed based on the teachings of Pete Kemme. His creative inspiration and penchant for masochistic workouts fueled my own desire to design the Barefoot Workout. He combines exercises from a wide range of sources, from the functional-fitness philosophy of programs like CrossFit to the training regimens of Olympic gymnasts. Also, Dean Jewett, of Jewett Strength and Conditioning (jewettstrength.com), influenced the development of this workout.

The Barefoot Workout Format

There are five different formats I use for my cross-training workout. Each of the formats is designed around the guiding principles. The different formats also provide variety, which keeps the workouts fresh and entertaining.

When doing this cross-training workout, pick a method by placing the format names in a hat. Once the format is chosen, leave it out until all have been chosen, then put them back in the hat and begin again after the workouts have been completed. This ensures continual variety.

For each workout format, you will be asked to choose a number of exercises from three groups. The groups of exercises are listed on pages TK, along with a brief description of each exercise.

Tabata Format

The Tabata protocol was developed by Izumi Tabata, a Japanese researcher. His protocol was originally used to train short-track speed skaters. I adopted the format because it presents an interesting challenge that builds strength and cardiovascular endurance.

The format is simple: Do an exercise for 30 seconds, then rest for 20 seconds. Repeat this cycle eight times. The original Tabata research was based on a 20-/10-second intervals, but I've had better results with the 30/20 intervals.

When doing the Tabata workout, you pick two exercises from the first group, two from the second group, and one from the third. Do these five exercises in any order.

Here's a sample of the Tabata format:

Exercise 1 is pull-ups. Start a timer. Do as many pull-ups as you can in 30 seconds. When the 30 seconds expire, rest for 20 seconds. When the resting time ends, do as many pull-ups

as possible in 30 seconds, then rest for 20 seconds. Repeat this cycle for a total of eight times. After the eighth cycle, rest for one minute, then move on to exercise 2. Repeat this process until all five exercises are completed.

Advanced Tabata workout: Add more exercises.

Interval Format

The interval format introduces the element of running mixed with high-intensity intervals. This format requires a place to run safely or a treadmill.

The basic idea is simple: You will do an exercise for two minutes and then run a predetermined distance. The distance can vary based on your experience, but I find four hundred meters to be sufficient.

Choose two exercises from the first group, two exercises from the second group, and one exercise from the third group.

Here's a sample of the interval format:

Exercise 1 is the wall ball. Start a timer. Do as many wall ball throws as you can in two minutes. At the end of two minutes, run the predetermined distance. If you are using a treadmill, just stop. If you are running a distance, set an out-and-back route so you end up at the starting point. When you return, take a one-minute break. At the end of the one-minute break, proceed to exercise 2. Continue this cycle until you complete all five exercises.

Advanced interval format: Add more exercises.

CrossFit's "Fight Gone Bad" Format

This format is a CrossFit Workout of the Day. For this format, you will choose two exercise from the first group, two exercises from the second group, and one exercise from the third group.

When you begin, do each of the five exercises for one minute with no rest periods in between. At the conclusion of the

five-minute exercise period, rest for one minute. Repeat the exercise cycle twice, for a total of three times.

Here is a sample of the Fight Gone Bad format:

- Sumo deadlift high pull
- Wall sit
- Thrusters
- Burpees
- Walking lunges

Start a timer. You'll spend one minute on each exercise. Begin by doing the sumo deadlift high pull. Immediately switch to a wall sit, then thrusters, and then burpees. Finish with walking lunges. After lunges, rest for one minute. Repeat this cycle two times.

Advanced Fight Gone Bad format: Sets can be added to increase the difficulty of the exercise. Instead of cycling through the five different exercises three times, do it four or five times.

Mount Everest Format

This format will appear to be very easy, but it becomes impossibly difficult. That is the reason I love it!

Pick one exercise (do not choose wall sits or jumping rope). When time begins, do one repetition of the exercise during the first minute. During the second minute, do two repetitions. For the third minute, do three repetitions. The object is to go as long as possible while maintaining this pattern. For example, if you were doing push-ups, you would do one push-up in the first minute, two in the second minute, and so on. Since the number of repetitions increases each minute, rest time is reduced. Eventually you will reach a point when you are unable to do all of the reps in the allotted minute, which would end the exercise.

Advanced Mount Everest format: After the first exercise, do the same format with an exercise from a different group.

Sweat Poker Format

Grab a deck of cards and choose four exercises—one from each group and a fourth of your choosing. As with the Mount Everest format, avoid the wall sit and jump rope exercises.

Assign one suit to each exercise. For example:

- Hearts = Hindu push-ups
- Spades = Jumping scissors
- Diamonds = Box jumps
- Clubs = Tuck jumps

Each numerical value on individual cards represents the number of repetitions you will do. The suit will determine the exercise. For example, if you turn up the 7 of clubs, do 7 tuck jumps. All numerical cards are face value. Jacks are worth 11, queens are 12, kings are 13, and aces are 14.

Shuffle the deck of playing cards. When ready, turn the first card over. Do the corresponding number of repetitions. Immediately turn over the next card and do that number of repetitions.

Warning: This workout is very difficult. The regular protocol calls for using the entire deck. It may be advantageous to use a partial deck in the beginning.

Advanced sweat poker format: Use multiple decks.

> If all you do is run barefoot-style, you're probably going to suffer an overuse injury. You also need to exercise, walk, and, ideally, hike in your bare feet or in Vibrams, to allow your feet and legs to get stronger. Feet need time to develop from the state of atrophy they've achieved in your shoes.
>
> *Tucker Goodrich*
> *yelling-stop.blogspot.com*

CROSS-TRAINING FOR RUNNERS

Why should runners cross-train?

Runners (especially short-distance runners who run up to 10K) need good upper-body strength. The ten-cent explanation is the more force that is exerted by the lower body, the more momentum the upper body has to absorb. Since short-distance runners run faster, a stronger upper body will help in this regard. Think of the buff Olympic sprinters. Longer-distance runners tend to have more lean muscle; however, a strong core will also be necessary for them to maintain good posture, especially with a relaxed frame. Sound like this might be important even for barefoot runners and others running with proper form? For any form, strong shoulders are still needed.

What about trail runners?

Trail runners have a whole other reason to cross-train. One word here: balance.

Any other reasons to cross-train as a runner?

There are a few other benefits to achieving functional fitness as a runner. One is the ability to reduce fatigue and facilitate recovery. High intensity interval training (HIIT) is built into most of the workouts at kemmefitness.com and the K-Crosstrain program, which is free on that site, and it can be an excellent substitute for speed work.

Another benefit of functional fitness is the variety that is inherent in such a program. Trail runners in particular can appreciate variety in a training program. Intense exercise is a mental game, and some of us need to change things up to keep in that game. Furthermore, sometimes you just get burned out with running. Cross-training is a way to fill the void until you are ready to add the miles back if reducing mileage to safely transition to

barefoot running. And when you do so, you will be able to run better!

Finally, let's just face it: Doing burpees with a slosh tube and other crazy exercises is just plain cool!

What if you want more information on the research and theories behind intense cross-training?

Simple. Go to the Resources page at Kemme Fitness and read the articles, or order the e-book *K-Crosstrain*. Or better yet, talk to a physical therapist or other ultrarunners. It is mostly common sense; however, there is a great deal of positive research on functional fitness and HIIT that you can find in your local library or online.

One final note: Cross-training does not make you any less of a runner. It will actually make you a better one.

Pete Kemme
kemmefitness.com

The Exercises

Each of the following exercises was chosen because it accomplishes specific goals related to balanced cross-training. As a runner, it is important to work muscle groups that complement running motions. If you rely on running alone, muscle imbalances develop, which lead to injury.

Try to avoid repeating an exercise until all exercises have been completed. This will provide a high degree of variability, which will help ensure no muscle groups are left unchallenged.

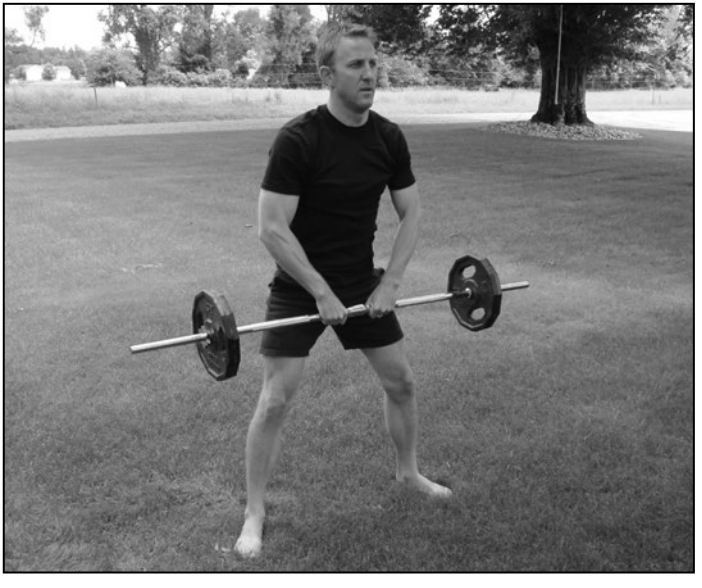
Also, most exercises require minimal equipment. What kind of instructor would I be if I don't stick to the minimalist theme?

Group One

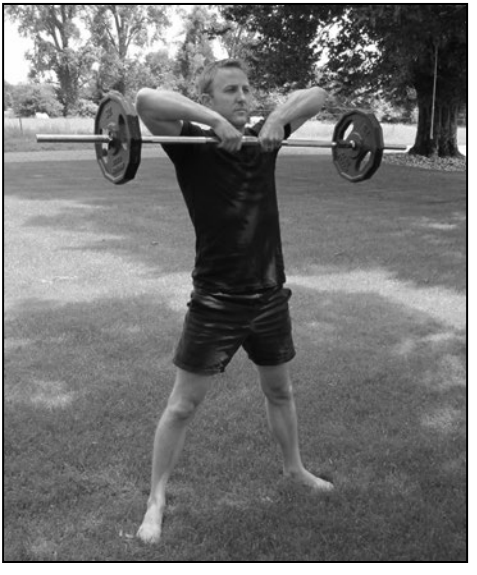
Sumo deadlift high pull

This exercise requires either a barbell or dumbbell.

Start with your back straight, hands close to the center of the bar, and feet slightly wider than shoulder width apart.



Lift the bar off the floor by straightening your legs and lifting the bar upward toward your chin. Keep your back straight.



Continue lifting the bar until it reaches the top of your chest. Return the bar to the floor by reversing the motion.

Hindu push-ups

Start in the “up” push-up position.

Bend your elbows and lower your head as if you are preparing to slide under a fence.

Your chest should be about an inch from the floor.

Extend your arms and arch your back. After you reach this position, reverse the motion to return to the “up” push-up position and repeat.

Pull-ups

This exercise requires a pull-up bar.

Start with your hands slightly wider than shoulder width apart and your palms facing away from your body.

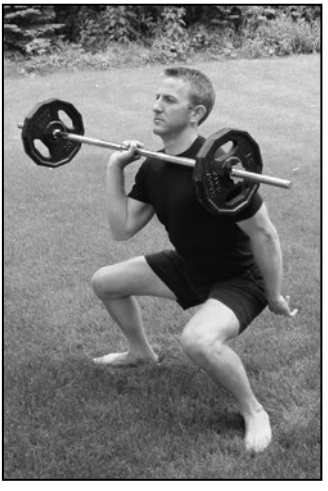
In one fluid motion, pull your chin above the bar.

Slowly lower your body to the starting position.

One-handed clean and press

This exercise requires either a barbell or dumbbell.

Start with your back straight, feet shoulder width apart, and one hand in the center of the bar or dumbbell.



In one motion, lift the weight to your chest using an arm row, then flip your elbow down and the weight up.

Press the weight over your head by straightening your knees and elbow.

Once the bar is overhead, return it to the floor by reversing the steps.

Wall ball

This exercise requires a medicine ball.

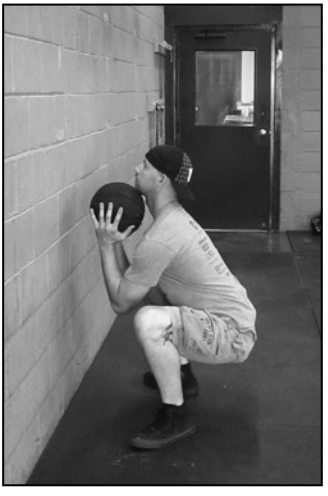
Start by facing the wall in the squat position. Your feet should be shoulder width apart, palms on the bottom of the medicine ball and back straight.

In one fluid motion, straighten your knees . . .

. . . and push the ball upward, releasing it from your hands.

The ball should hit an imaginary spot on the wall several feet overhead.

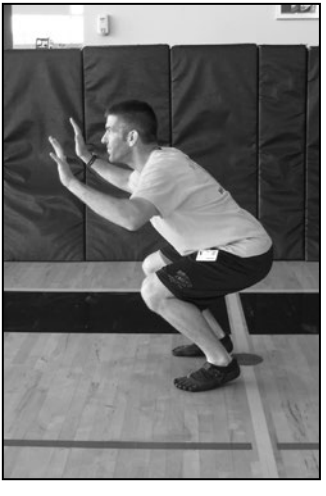
When the ball returns, catch it and return to the starting position.



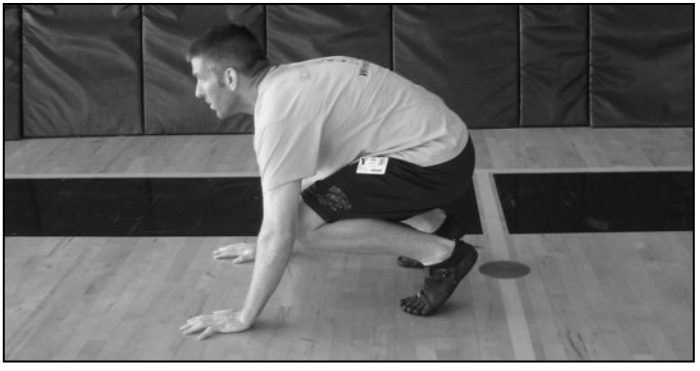
Once you return to the starting position, repeat.

Burpee

Start with your arms overhead and feet about shoulder width apart.



Squat down by bending your knees.



Place your palms on the floor and kick your feet backward.

After kicking your feet backward, you'll be in the push-up position.

Complete the push-up.

Pull your feet up to the squatting position.

Jump into the air.

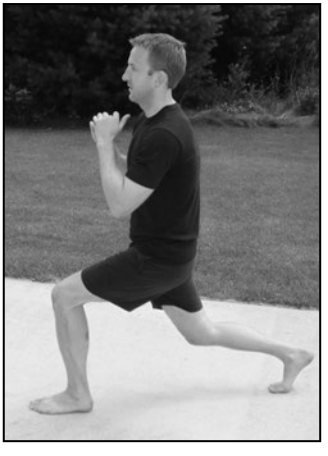
After leaping up, proceed immediately into squat position and repeat the exercise.

Group Two

Walking lunges

Keeping your body upright, take a step forward and flex downward until your back knee lightly touches the floor. Bring your back leg forward so that it's even with your front leg, and repeat with your back leg.

Jumping scissors



Begin with your left foot forward. Jump vertically into the air while "scissoring" your legs. The number of jumps will be determined by the format of the workout that day.

Land with your right leg forward; repeat.

Tuck jump

Start with your feet about shoulder width apart and hands extended, palms down, in front of your body.

Squat slightly and jump into the air.

The goal is to touch your knees to your outstretched hands.

Wall sit

Your knees and calves should form a 90-degree angle with your back flat against the wall. Maintain this static position for the duration of the exercise.

Knee taps

Alternate between lifting your left and right knees to touch outstretched hands.

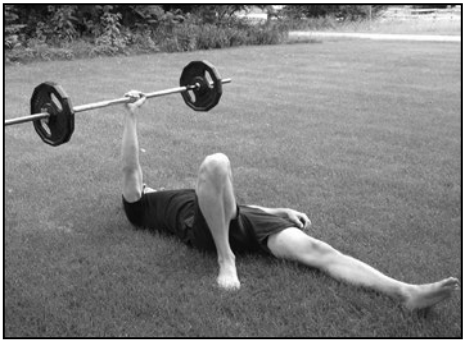
Jump rope

This exercise requires a jump rope.

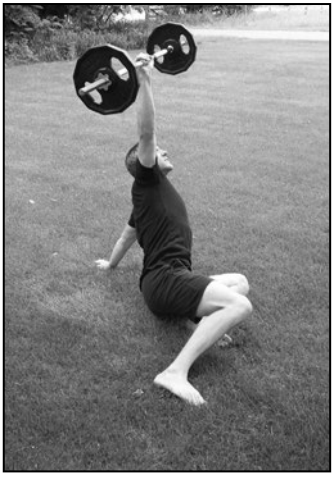
Group Three

Turkish getups

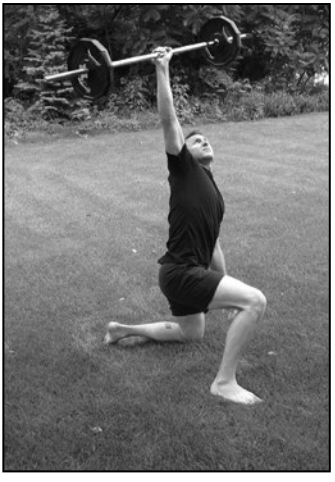
This exercise requires a dumbbell or barbell.



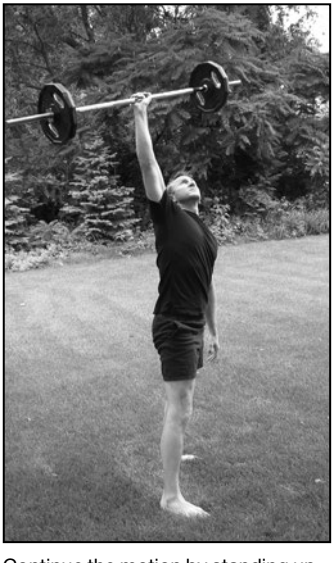
Start lying flat on your back with a barbell in your right hand. Tuck your right foot under your hip. While doing this exercise, keep your eyes and your right arm pointed toward the ceiling through each phase.



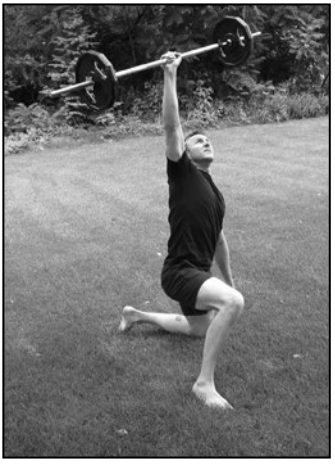
Using your left arm, lift your upper body up while bringing your left foot under your body.



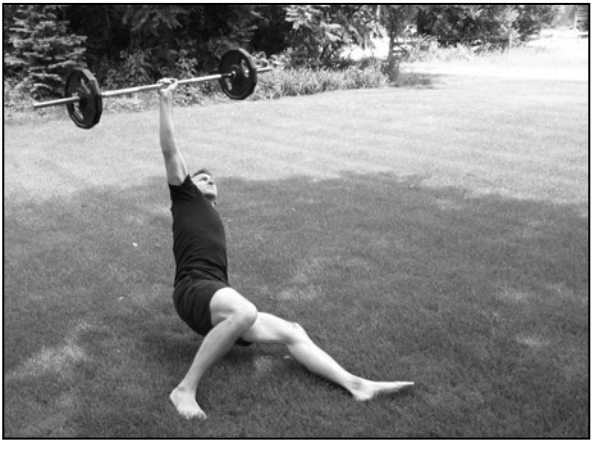
Step up on your right foot.



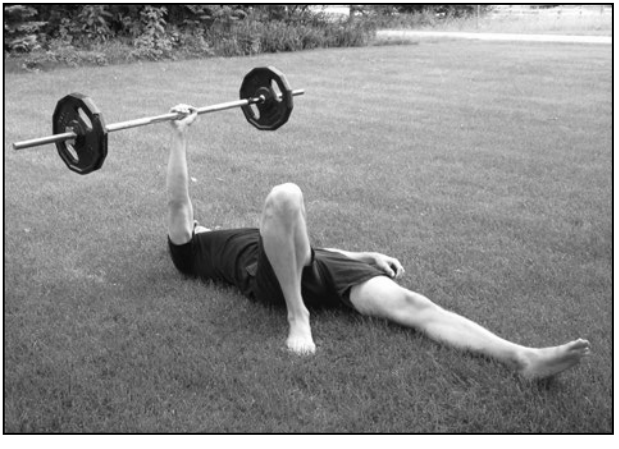
Continue the motion by standing up.



To return to the starting position, kneel with your left knee.



Lower yourself and place your left hand on the floor. Extend your legs outward from your body.



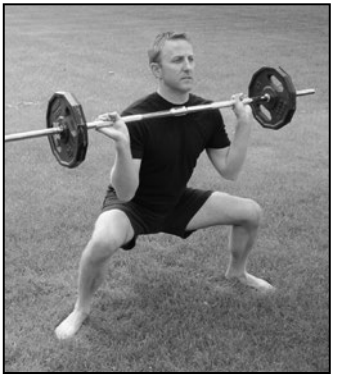
Return to the down position.

Burpee pull-ups

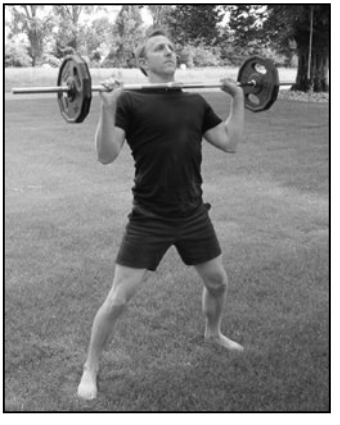
This exercise requires a pull-up bar. Start by doing a burpee, as described on pages 139–141. When you jump up, grab the bar and immediately execute a pull-up. Lower yourself until your elbows are extended, then drop down to the floor and immediately move into another burpee.

Thrusters

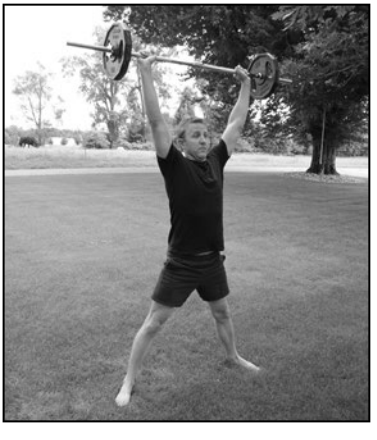
This exercise requires a barbell.



Start with a wide stance, back straight and hands slightly wider than shoulder width apart on the bar.



Push the bar upward from the squat position using both your arms and legs.

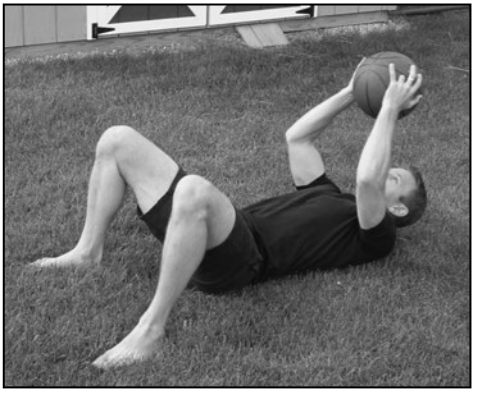


Extend your arms overhead. Return to the starting position by reversing the steps.

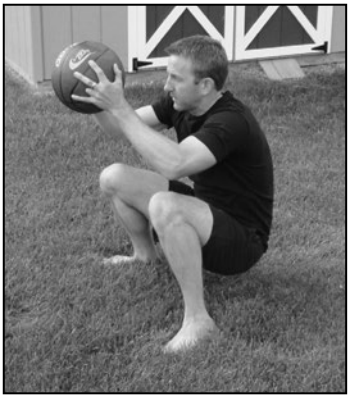
Medicine ball getups

This exercise requires a medicine ball.

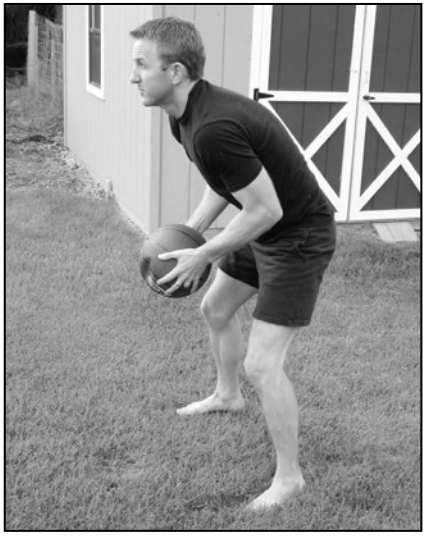
Start by lying on your back with the medicine ball resting on the floor overhead.



Lift the ball upward over your chest.



Continue the motion by rocking up on your feet.



Stand up.

Lift the medicine ball overhead. To return to the starting position, reverse the steps.

Frog jumps with walkout and push-up

With your feet together, begin by jumping forward as far as possible.

When landing, absorb the impact by bending your knees, and gently move to "frog" position.

Keeping your feet in place, use your arms to walk out to the push-up position.

Do a push-up.

After the push-up, pull your legs forward so you return to the frog position. Bring your feet back together, and repeat the exercise by leaping forward.

Box jumps

This exercise requires a plyometric platform (or any other stable object that can be used to jump on).

Begin by standing with feet shoulder width apart. Jump.

Stand up straight, jump down to the ground, and repeat.

Land on the edge of the platform.

If I Could Run 100 Miles in Minimalist Shoes, You Can, Too!

Hallucination 100 Mile Race Report

In September 2009, I decided to run the Hallucination 100 Mile. I saw this adventure as the culmination of my barefoot running efforts. The efficiency and ability to avoid injury I had gained from learning to run better allowed me to accomplish something that had been unimaginable when I ran in traditional running shoes. I would not have been able to make this journey if it were not for the inspiring words of my fellow ultrarunners in other race reports. Race reports can be a wealth of information. I would encourage every runner to share their thoughts, experiences, and general adventures by writing race reports for their more memorable races.

The Seed Is Planted

The year was 2004. We were watching the Janet Jackson Super Bowl at our friends' house. Doug, an old work friend of Shelly's, mentioned running the local 25K road race. I was amazed—who would run 15.5 miles?! That led to a discussion of the insanity of running a marathon. Now, those people are really crazy—26.2 miles! At that point, the farthest I had run was a four-mile adventure in high school. Then Doug uttered the words that have haunted me for years: "There are even longer races. They're called ultramarathons. Some are one hundred miles long!"

Moments later, the now-famous wardrobe malfunction occurred. I missed it. I was entranced by this idea that people would run a hundred miles at one time. Little did I know that wintry day in 2004 would change my life. That spring, Shelly and I started running regularly. The thought of ultramarathons brewed in the back of my mind for that entire year. I would occasionally do some research. The more I discovered, the more intrigued I became. The next year, Shelly and I decided to enter a local 15K. That led me to my first attempt at training for a fifty-mile ultramarathon, in September. I trained hard all summer, but repeated injuries derailed my mileage. I settled for a trail marathon. I managed to finish (in pain), then ran another marathon a few weeks later.

In 2006, I was determined to run a fifty-miler. That spring, my father passed away due to a major heart attack. His lifetime of smoking had ultimately led to his death. That event had a profound impact on me. My second child was born a week after he died, and I did not want my children to lose their father like I had lost mine. My desire to complete an ultramarathon became a near-obsessive quest to ensure health.

Doug's words continued to echo in my head: "Some are one hundred miles long!" To reach my goal, I knew I would

have to overcome the injury bug. My exhaustive research led to barefoot running, which I adopted in earnest. There were many trials and tribulations in that first year. I made about every mistake a new barefoot runner could make. Still, I seemed to avoid major injuries.

That fall, I ran and finished my first fifty-mile race, a trail run that was part of the North Country Run. Running alone through the forest was an incredibly emotional experience. It reminded me of the many days spent hunting with my dad. I felt this powerful connection to the wilderness, which made the race especially emotional. I knew I wasn't ready for the hundred-miler yet, so I ran the same fifty-miler again in 2007. Once again, I finished without major problems. I decided I was ready.

In 2008, I entered the Burning River 100 Mile Endurance Run. I made many stupid mistakes, hit a serious wall, and ultimately gave up and walked my way to being pulled from the course at about mile sixty-five. It was a devastating blow to my confidence. It was the first time I had really tried to do something and failed miserably. I had doubts about my ability to finish a hundred-miler. Maybe it was just too hard. Maybe I just didn't have what it took.

Hallucination

When 2009 rolled around, I was undecided about attempting another 100. Some major personal issues resulted in incredible self-growth through the spring and early summer. At some point during this time, I reevaluated my goals as a runner. I had this obsessive drive to run a hundred miles, but *why*?

I concluded I was simply seeking the adulation that comes with doing stuff others cannot fathom. I slowly began to realize my quest needed to be about my own spiritual growth and not

about the outside world. Finishing a 100 represented the final stage in my transformation from the troubled, broken person I was to the ideal person I wished to become.

I scoured the ultra schedules for a race that would match my available time frame. As luck would have it, there was a brand-new event two hours from my house, the Run Woodstock festival. It featured a few short races, a half marathon, a marathon, a 50K, a fifty-miler, and the Hallucination 100 Mile. I liked the sound of that! It was a loop course, in which runners complete six loops to finish the race. This would allow me to become familiar with the course after the first loop, which was an advantage over Burning River.

I immediately began working on a training schedule. I determined I would have time to train. I would be able to correct the mistakes I had made the previous year at Burning River. Most important, my wife was unbelievably supportive. She agreed to make the trip and crew for me. This was the single best motivator I could have received. I recruited additional friends to help me complete my journey.

As far as training, I knew I needed more miles. I ran more, including more night runs. I became an expert at running trails at night. I knew I would need my barefoot trail running skills, so I prepared to wear the most minimal shoes I had—a pair of Vibram FiveFingers KSOs. I also had to work on eating during the race. I experimented with every food I could imagine. I found a good selection that worked for me: ice cream, pancakes, and hot dogs. I reduced my weight-lifting routine, increased my mileage, and lost some more weight. I had run the Burning River hundred-miler at about 184 pounds. For Hallucination, I was down to around 177 pounds. I tweaked a few other things, including simplifying my crew plans, bringing less junk, and bringing more socks to change into. I would be ready!

The Crew

Before I knew it, race weekend was here. Our crew was set to meet up. This is the crew that made the trip:

- *Shelly Robillard:* My wife and the mother of our three wonderful (snicker) children. Shelly was a runner, but she had just given birth five months prior. Still, she was planning on pacing for me. She would eventually become the official crew chief.
- *Jason Saint Amour:* My friend from elementary school. We'd known each other forever. If you recall from the beginning of the book, we ran barefoot together in high school. He'd started barefoot running after crewing for me the previous year. He'd trained for the half marathon at Woodstock, but hurt his ankle the previous Sunday. His wife, Sara, would also be with us for part of race day Saturday. Jason would earn the job title of "lube man" as the race progressed.
- *Mark Robillard:* My running friend, who is also my older brother. Mark, an experienced trail runner, had finished a trail marathon the previous week. Mark was "picture man."
- *Stuart Peterson:* A friend of Mark's. I'd met Stuart a few times briefly. He was known as "RV man" for the thirty-two-foot RV he brought, which acted as our base of operations. Stuart is the single most entertaining person I think I have ever met.
- *Michael Helton:* A friend from the *Runner's World* Barefoot Running forum (he's known as Notleh there). I had never met Michael in person prior to the Friday before the race, but I knew he ran barefoot, had a great sense of humor, drank beer, and would have no problem doing whatever it took to get me to the finish line. Michael

generously volunteered to drive from Chicago to crew and pace for me, for which I am very grateful. He came to be known as "time management man."

- *Rich Elliott:* Technically not part of the crew, but he made the trip with us. Rich was attempting to run the fifty-miler with training that consisted of a 5K road race three weeks earlier. That's it. That should pretty much sum up Rich's "dive in headfirst" personality.

Rich and me prior to the start of the race

Once at the start finish line, we met up with Michael, Mark, and Stuart. The air was a strange combination of cool and humid; it felt as if it were about to rain. I thought my choice of attire was well planned, but my crew couldn't resist teasing me about the Gap sweatshirt I was wearing. It's a good luck charm! Every other runner and most of their pacers and crew were wearing running attire; I was dressed in clothes that appeared to be pulled from a lost-and-found bin at a Walmart. Perhaps I'm not the snazziest dresser.

We milled about, talked to a few other runners, and then got the call to line up. Rich and I would be starting together since the hundred and the fifty milers started at the same time. We decided to start near the back of the pack. We took our places next to a local guy who trained on the trails often. He gave us some good information about the terrain, but I forgot

it within seconds. After a few minutes and some instructions from the race director, we were off. We slogged through the timing gate and then headed out over the damp grass. Let the adventure begin!

We passed a few people before the trailhead, where we were funneled into a single-file line. Rich fell in behind me with maybe eight or ten people behind us. Almost immediately, it began to rain lightly. We had emergency rain ponchos, but I decided to keep that gun in the holster.

The course started with a boardwalk over a swampy area, then a root-filled, rocky hill, followed by another and another. That pattern would repeat itself throughout the race.

We did get a quick reprieve from the rockiness when we ran through the Crooked Lake Commune campground. There were other runners and crew there awaiting the later race starts, including a 50K, a marathon, a half marathon, and a 5K. They cheered us enthusiastically! It was a cool feeling.

As soon as we exited the campground, it began to pour. My precious Gap sweatshirt was absorbing water, but I was wearing two more layers underneath, and they kept me warm. Almost as soon as the downpour had begun, it stopped. That would be the extent of the rain for the remainder of the race.

The first leg was slow; about half of the time was spent walking, as the trail was not conducive to passing at that point. I relaxed and just focused on warming up. The earlier rain had left the downhill sections especially slippery and some runners were slipping and sliding repeatedly. The smooth soles of the Vibrams provided poor traction, but I was able to avoid unnecessary slipping and falling because of good form. There's a definite advantage to running with your weight directly below your center of gravity!

After about forty-five minutes or so, we hit the first of the aid stations. It was a zoo! Almost all the runners and corresponding crews were fighting for supplies. My crew was eagerly

awaiting our arrival. There was considerable confusion as members tried to accomplish each task I had given them. I swapped the water bottle of my handheld water bottle sleeve with a full bottle and guzzled about two cups of a Ben & Jerry's Sweet Cream & Cookies and milk concoction. I would save the clothes and sock change until the next aid station. It would warm up considerably once the sun rose. Rich refilled his water bottle, and then we were off. The stop took a bit longer than planned, but the crew would learn and adjust rapidly.

The second leg started out with rugged terrain, lots of hills and roots. Rich was still behind me, but he was starting to look a bit tired maintaining my pace. I think I was running at about a twenty-hour pace (twelve-minute miles) at this point. The crowd thinned out a bit, but I didn't do much passing. I took my last Succeed electrolyte tablet as the sun was beginning to rise.

I was starting to get warm, so it was a relief to get to the second aid station. I ditched the sweatshirt and hat, swapped my water bottle, and replaced my stash of electrolytes. I sat down in a chair and pulled off my socks. The Injinji toe socks were pretty wet, but my feet looked good. I doused them with powder, put fresh socks on, and slipped back into the Vibrams. The last task was to reapply Sportslick lube to my groin and thigh areas. The tube was freezing cold and hard as a rock. I managed to coax some out, handed it back to the crew, and asked them to keep it warm. Rich and I left this aid station in pretty good time because our crew was a little more organized.

The next section was about two and a half miles. I didn't know it at the time, but crew access here was tough. During this leg, Rich and I passed a few runners. Rich seemed to be slowing down a little, just as I was warming up. I made the decision to

start pulling away. I knew building a good time padding now would be critical for the second half of the race in order to beat the thirty-hour cutoff. My race strategy called for as much running as possible for as long as possible.

In Burning River, I had tried using a run/walk ratio of four to one, which ultimately put me too close to the cutoff time. This time, I used a race strategy given to me by Jeremiah Cataldo, an ultrarunning friend who had recently finished the Mohican hundred-miler (his first 100). His strategy was simple: Run as long as you can; only walk the up hills.

This section was relatively smooth with slightly fewer rolling hills. I settled into a comfortable pace. Soon enough, there were several runners between Rich and me. When I arrived at the next aid station ("Richie's Haven"), my crew was nowhere to be found. Since it was a short leg, it wasn't an issue. I refilled my bottle with a mix of Gatorade and water, grabbed a GU for the trail, and headed out. While not my favorite race food, the GU (flavored energy gel) would hold me over until seeing my crew again. I didn't think I could have beaten the crew to this aid station, because my pace was tortoise-like at best. As it turns out, they'd been preoccupied trying to find parking.

The fourth section started out silky smooth, but it got rough quickly. During this lap, I talked with a few runners, including a guy who had fallen multiple times. This was his first fifty-miler, and he was looking strong despite being covered in mud.

I also met up with a gentleman who was checking the ribbons that were used to mark the course. He also worked the course for Dances with Dirt, a notoriously difficult race held in the same area. We talked for a few miles before he turned back. I had been unaware Dances with Dirt used the same course. Based on the horror stories I had heard about that race, the revelation worried me.

I encountered what would come to be my nemesis during

the daytime hours: mountain bikers! First, I have to say about eighty percent of the bikers I encountered were considerate and supportive. They would stop and get off the trail, or at least move to the other side. Some were downright awesome. I had multiple bikers cheer me on. However, the remaining twenty percent nearly ruined my perception of the rest. It was not uncommon for some to yell at us for using "their" trail. But aside from the bikers, the day was going well so far.

The fourth aid station was smooth as could be. The crew seemed to have found their groove. I was in and out in no time at all. As I was leaving, I told them to relay my apologies to Rich for unceremoniously ditching him.

The last leg was approximately 4.1 miles of rocky hell. The hills were about the same as those on the rest of the course, but the trails were decidedly more technical. I would grow to hate this leg as the day wore on.

I was feeling good at the beginning of this first loop. I think I was riding a high from the two pints of Ben & Jerry's I'd consumed. I was ahead of my time predictions! About halfway through, I started to crash. It was totally unexpected. My pace slowed, I didn't have any energy, and my motivation suddenly disappeared. This wasn't supposed to happen this early. I started to panic.

As the lap progressed, I went through my mental checklist of possible causes. I was doing okay with hydration and electrolytes. I had plenty of calories. Maybe it was a sudden blood sugar crash due to the three thousand calories of coffee cake and ice cream I'd eaten. I decided I needed some protein.

I could snag something at the start/finish line, which was quickly approaching. I knew I was getting close when I crossed the road into the park. The line was about a half mile away.

I spontaneously decided to take my Vibrams off for this section to dry my feet a bit. It felt good to strip my damp socks and shoes off. The dirt under my feet felt cool and refreshing.

This new sensation provided a barely perceivable boost to my worsening mood.

The trail leading to the start/finish line was fairly rough, but I was alert enough to easily avoid the small, sharp rocks. I traversed a few hills, hit the cut-grass path, turned the last corner, passed by the cheering crowd sitting around the fire pit, ran down a small hill, and crossed the line to finish my first lap. Only five more to go.

The tent at the start/finish was a busy place with lots of runners and lots of food. I ate a turkey sandwich and a cup of chicken noodle soup. I didn't see my crew. Perhaps they'd gotten caught up waiting for Rich. I exited the tent and started the quarter-mile run to the trailhead. As I crested the last grassy hill of the park, I saw my entire crew cheering loudly. They had set up chairs near the trailhead. Their logic was simple: It was close to the RV. It worked out well—it allowed me to do my aid station routine without having to deal with the aid station traffic. I didn't tell them I felt like garbage. I just smiled, put my Vibrams back on, did my thing, and then hit the trail again.

Lap two started badly, as it took a while for me to get out of the funk. Eventually my mood improved. Still suspecting the sugar buzz as the culprit, I was questioning the logic of the Ben & Jerry's shakes. When I got to the first aid station on lap two, I took one sip and gagged. I was officially past the point where I could tolerate sugary food. I asked for the pancakes. I swapped my water bottle again, replaced my Succeed S!Caps, changed shirts, and was about to re-lube. When I asked for the Sportslick, Jason pulled it out of his pants. I'm pretty sure it wasn't in his pocket; rather, it was actually down the front of his pants.

I re-lubed, grabbed some pancakes, and hit the trail. After about a hundred yards, I tried eating one. As soon as I put it in my mouth, I gagged. Damn! The pancakes caused the same gagginess as the ice cream shakes. I knew this was a serious

problem. The only other food items I'd brought were hot dogs, and I didn't have enough to sustain me for the entire race. I don't remember a lot from this leg. I spent pretty much the entire three or four miles choking down quarter-size pieces of pancake.

Right before I got to the next aid station, I remembered I had packed some chia seeds in my gear, almost as an afterthought. I'd figured they may make a good topic of conversation before or after the race. I'd experimented with them in training but hadn't thought of them as a primary fuel source. Hey, if it works for the Tarahumara, it could work for me!

As soon as I got to the second aid station of the second loop, I asked Shelly to get the chia. I lubed up, replaced my packet of electrolytes, and checked my pace. Michael was doing an awesome job of recording my times. I was on about a twenty-two-hour pace. Perfect.

Shelly brought me the canister of chia seeds. I didn't think about the best method to eat them, so I just took a scoop and dumped it in my mouth. It felt a little like eating fine kitty litter. I immediately gagged, then choked on the tiny seeds, which instantly absorbed the saliva from my mouth. I instinctively tried to swallow, which only caused me to cough. Seeds sprayed everywhere! I'm pretty sure my crew, the aid station volunteers, and the other runners were laughing at that point. I then grabbed a cup of water, dumped another scoop of seeds into it, and pounded the seedy mixture. It went down easily. Success!

At that point, one of the aid station workers started asking questions about the Vibrams. I tried to avoid being rude and cutting him off, but I had spent *way* too much time at that aid station. I told my crew to have some chia ready at the next station, and I hit the trail. I didn't know if I could keep eating the chia for the whole race, but it was worth a shot.

The next leg was short and uneventful. As I approached the third aid station, I came across my waiting crew. They had

blazed a path through the trees to meet me at that spot. (I'll have to take this crew if I ever run Hardrock, a race with notoriously hard-to-reach aid stations.) I went through my usual routine. They handed me a bottle of chia and water, but it looked like it had been mixed for thirty minutes or so. Chia absorbs water and turns into a thick gel. With the right ratio, it turns almost Jell-O-like. I turned the bottle upside down and the chia just stuck to the bottom. I frantically started dumping any liquid I could find into the bottle, shaking it up and attempting to get the chia out. It worked, but it was disgusting. It had little taste, but the texture reminded me of frog eggs scooped from the mud of a pond.

I left this stop quickly; the actual aid station was only about a quarter mile down the trail. Since I was already supplied, I just grabbed a GU, gave them the number on my race bib so they could keep track of which runners are on the course, and took off. For a fleeting moment I felt like an elite runner.

The next section was fun. I met up with Brian Thomas, whose blog, lupusrunner.org, I had read a few weeks earlier. He had recently finished Burning River (the race I did not finish the previous year). His hundred-mile advice was deceptively simple: "Keep moving!" That wisdom actually served me well later in the race. We swapped positions throughout the day. I believe he was experiencing ankle pain; he wisely DNFed after the fourth lap.

I also met up with Dusty, a friend from the KickRunners running forum. She had given me a lot of tips for running this particular trail, as she trained here often. It was cool to finally meet her in person.

This lap was turning into a major social event. A few minutes after separating from Dusty, I met Scotchkee, another friend from the KickRunners forum. He would be running the fifty-miler as a training run for the Javelina Jundred in a few weeks (which he later completed for his first hundred-mile

finish). Together, Brian, Dusty, and Scotchkee made it an interesting and fast loop. Somewhere in there, I stopped at the fourth aid station for the usual treatment.

On this last leg, I met up with Jesse Scott, another barefoot runner, who had just started. He was running the 50K and was looking great! We talked for a minute, and then he was off. I would see him at the finish later; his first ultra was a success! Since that race, Jesse and I have shared many ideas on barefoot and minimalist shoe running. He has a bright future in the world of ultramarathons.

I was getting excited. Once I passed the start/finish, I'd get Shelly as my first pacer! Picking up Shelly as a pacer was a major boost. I was feeling pretty good anyway, but that really added to the fun.

This lap would be a major challenge for Shelly. The farthest she had ever run was 15.5 miles, and that was two kids ago. Our youngest son was five months old, so her training had been somewhat limited. To add to the challenge, she had run trails only a handful of times.

On loop three, I realized Shelly was behind the awesome organization of the crew at each aid station. Prior to taking her away to pace, I'd asked her to make a list of duties for the rest of the crew. I did not have tremendous confidence in the remaining crew's ability to stay organized.

The aid station stops throughout this loop went pretty well. My feet felt fine, but they looked like hell. They were becoming macerated from sweat. The skin was turning white and looked as if it was going to fall off. Michael seemed a bit shocked, but I thought they would be fine.

During this lap, I briefly ran with another guy running the fifty-miler. We talked about my feet after he asked about the Vibrams. I told him about the macerated skin, and he reminded me about putting lube on my feet to essentially waterproof them. At the next aid station, I liberally coated my feet with

Sportslick before I put the Injinjis and Vibrams back on. That turned out to be a winning combination. Throughout the rest of the race, I only developed three dime-size blisters, and the maceration was limited to the damage already done.

As we neared the end of this lap, I was a bit sad. I would miss the opportunity to talk to Shelly except for the thirty-second "How are you feeling?" conversations at the aid stations. Still, she was looking a bit rough toward the end of the lap. The long miles and rough trails had taken their toll.

As I neared the start/finish line, I gave Shelly my water bottle to swap while I grabbed some food at the tent. The food selection was improving, as the shorter races had ended. I grabbed four pieces of pizza, a hunk of turkey sandwich, and a cup of beef broth as I walked to my waiting crew at the trailhead. The pizza may be the best I've ever eaten.

The Halfway Point

Lap four was Mark's lap. I had run with Mark a few times in training, so I was familiar with his pace. I knew I could count on him to keep me moving if I ran into trouble. In my previous 100, this is where I crashed and burned, but I was feeling pretty good this time.

Then the haziness set in. The memories are a jumbled mess. All the aid stations became indistinguishable; each hill felt like the rest.

The trails were now nearly empty because the shorter races were done and most of the fifty-milers had finished. Darkness would be setting in soon. I started having problems with hand chafing early in this lap, so I began using one of my most embarrassing pieces of equipment—my women's stretch-knit gloves. Luckily I had packed my black gloves and not the hot pink ones. That kept the ridicule in check.

I was still pretty warm, so I only wore one, on my water bottle hand. Someone on the crew commented it was a tribute to Michael Jackson, who had recently died. If only I could moonwalk.

Darkness fell sometime around the middle of this lap. We picked up our lights at the second aid station. I was using a Fenix handheld, which has served me well. Most night runners prefer a headlamp, but I find the handheld provides better terrain recognition.

At some point, I was worried about being cold, so I asked my crew to get my pants. I think they were surprised to see cotton pajama pants, plaid pattern and all. It went well with my Gap sweatshirt. So after taking more flak for my attire, I decided to forgo the pants. I would run in shorts the rest of the way.

This lap also saw the onset of my first knee pain when running down hills. I have a chronic patellar tendon injury from pitching baseballs. The injury sometimes flares up when I'm running downhill for hours. This severely slowed my downhill pace, but it was manageable.

Mark and me around mile 60

The midpoint aid station was absolutely fabulous at night—the volunteers were awesome! They gave me some sweet tea, which provided an immediate boost. I also appreciated their support and reassurances that I looked great.

On the last leg of this lap, I stubbed my right pinkie toe for the first time. It felt as if I had ripped it off, but it didn't affect my gait. I was able to continue without breaking stride. I also felt the beginnings of a hot spot on the bottom of each heel, where blisters would eventually form. This wasn't a huge issue, but it had been a long time since I had run with a blister.

Mark asked if I would do this again. As much as I wanted to say, "No!" in that moment, I knew this wouldn't be the last time I'd tackle this challenge. As would be the pattern for the last three laps, the last leg became a hellish walk-fest. At least the people at the start/finish line at that point were *very* supportive. It was a great atmosphere to experience! If it were not for the support of my crew, I may have considered quitting at that point. The true value of a crew and pacers became apparent.

Lap five was Michael's lap. He would be with me from eleven o'clock Saturday night until around five o'clock Sunday morning. Based on our e-mail exchanges, I knew he would keep me moving at all costs. Also, he was our time management expert throughout the race. Even in my diminished state, I knew I would most likely finish if I could keep moving.

We had what I vaguely remember as great conversations, but I couldn't tell you what we talked about. I think we discussed food, real estate, and a lot of running. I think the *Runner's World* Barefoot Running forum was discussed, as was immigration policy. Most is just a distant blur.

I felt pretty good that whole lap, but I walked almost the entire time. Although the pain was getting bad, I felt strong mentally. There were no signs of the complete crash I'd experienced at Burning River. I remember Mark taking pictures at

each aid station. I was hallucinating weird things in the depths of the forest. I saw a lot of buildings—outhouses, mostly. I'm sure Sigmund Freud would have something to say about that.

Toward the end of that loop, I had discussed the possibility of taking a fifteen-minute nap to reset my circadian rhythms and ward off involuntary sleep. I wasn't feeling tired as the loop ended, so I didn't mention it. As I found out later, the crew wouldn't have let me. I still think I could have handled it if I'd had a bigger time cushion, but I appreciate their concern. Oddly, I don't remember going through the start/finish line tent at all. I *do* remember seeing Stuart, though!

As I walked over the last hill before the trailhead, my light illuminated what appeared to be a giant burning flare. As I got closer, I realized it was Stuart wearing an incredibly reflective crossing guard–style shirt. It was blindingly bright. I would have no problems finding him in the darkness.

We set off on the final loop. I knew my time would be fairly close, so I dug deep and managed to run some flats with Stuart. Almost immediately, he started storytelling. I was thoroughly entertained. I remember him talking about his memoirs, which he called *My Life As a Dork*. Growing up as a dork had a profoundly positive impact on the person he is today, and I could relate to every one of his stories. It was a strangely powerful moment. Then I remembered I had run about eighty-eight miles and I snapped back to reality.

Stuart was really pushing the pace. I didn't want to run, but I had to in order to keep up with him. I knew I had plenty of time, but I blindly complied. My quads finally started to get fatigued to the point where the hills felt difficult. The problem was exacerbated by a feeling of sleepiness that was hitting me in ever-strengthening waves.

As if he could sense my struggles, Stuart broke into show tunes—in his hauntingly beautiful voice. I felt as if I were dreaming. Granted, it was a dream filled with daggerlike pains

from blisters, a strange grinding pain in my knees, a searing pain in the back of my right knee and quads, and a myriad of other seemingly traveling pains caused by a combination of fatigue, overuse, and friction. The pain started to fade as I began to relax. Stuart's singing was fading slowly. The dream abruptly ended when I felt myself falling. I somehow managed to catch myself before I hit the ground. It took a few seconds to realize I was running. It was dark. I could hear Stuart singing, his bright crossing-guard shirt easily visible in the beam of my light. I had fallen asleep while running on a flat boardwalk. Damn, that was scary!

I continued to trudge on, wishing the sun would come up. I think we passed a few runners during this stage; some may have passed us, too. My memories are *very* fuzzy.

Sometime between the first and second aid stations, the sun came up. Experienced hundred-miler runners will say it makes a huge difference—and it does! It was an immediate boost. The grogginess faded and I felt alert.

Unfortunately, daylight brought more mountain bikers. As the first group passed us, the lead biker shouted out, "Four of us!" as he whizzed past. A few seconds later another biker passed, then a third. Then a few minutes passed. The fourth biker was nowhere to be found. That was odd. About twenty minutes later, the lead biker came back and asked us if we'd seen his friend, the fourth rider who had seemingly disappeared. We hadn't, so he continued to backtrack.

About a half hour later, we saw him again. Stuart asked if he'd found his buddy yet. The guy replied, "No, I'm checking all the other trails." Stuart, perhaps channeling some of my newfound disdain for mountain bikers, quipped, "Don't worry; I'm checking all the ditches!" I laughed a little, realized it hurt too much, and continued shuffling along.

Eventually we started to meet a few recreational runners going in the opposite direction. Most had been running the

trail Saturday morning. It was surreal to think that I'd been running for more than twenty-four hours at that point.

When we pulled into the last aid station, I knew it was almost over. I was getting very tired of running; I just wanted it to end. It was a lot like getting a tattoo—the constant pain, while tolerable in the short term, plays games with your mind. I now understand how people DNF at mile ninety-five of a hundred-mile race. The previous ninety-five miles were inconsequential. I felt blind to everything except the four-mile mountain remaining.

My entire crew was going to hike the rest of the course with me to the finish. I was glad they would be there to keep me company, especially Shelly. Her feet had taken a horrific beating on the lap she'd paced. She said it felt like her toenails had come off in her socks. Needless to say, she couldn't fit her swollen, painful feet into her shoes, so she put three or four pairs of socks on her feet. It looked like she was wearing puffy pillows. I think the crew made a joke of it, but I wasn't coherent enough to understand.

We started hiking a long, hellish, rock-filled leg. It began pretty well. I was tired and in a lot of pain, but still pretty much "there" mentally. At some point, I stopped to pee on the side of the trail. A tree immediately to my left had what appeared to be a mouth, and it was chewing something, making a corresponding chewing noise. Then it winked at me. Okay, maybe I wasn't as mentally sound as I thought I was.

My last solid memory of the final leg is of Michael exclaiming, "My ass crack hurts!" I remember laughing. Then nothing.

The remainder of that leg feels to me now like I was looking into a tunnel and hearing muffled voices around me. I guess there was a flower-picking incident, and I hallucinated a bee flying around me. I do remember feeling very emotional

with the realization that I was finally going to fulfill this long-standing goal, but the emotions felt dreamlike.

The Finish

Eventually we made it to the asphalt, the landmark that indicated about three quarters of a mile left. I remember that clearly; I suppose the realization that the end was near caused me to snap out of my trancelike funk.

With Shelly by my side, I walked the small asphalt hill, turned right on the trail, traversed a few hills, and hit the mowed grass of the park. A few people were milling about; they started clapping and yelling encouragement. I crossed the field, turned down a small hill, then turned toward the finish line. With fifty yards left, I managed to break into a pathetic run.

Running under that finish line sign was one of the greatest feelings I have ever experienced, not so much because of the gravity of the situation or the realization of a longtime dream, but because I could finally stop running. The sense of accomplishment wouldn't hit me until Monday.

Twenty-nine hours and five minutes after starting, I finished running one hundred miles. I shook the hand of the race director as he placed a medal over my head and handed me my buckle—the symbolic end of hundred-mile races. Amazing. I shook the hands of my crew, thanking each one for helping me reach this pinnacle. Then I hugged Shelly. I had been fighting back my emotions for the entire final leg. Holding her in my arms right then was one of the best moments of my life. That hug was the culmination of the transformation I had begun months earlier. Those rock-laden rolling hills through the rural trails of Pinckney, Mich., had served as a metaphor for some of the hardest parts of my life, and now

I stood at the end, victorious in the arms of the woman I love. There will be other hundred-milers, but this one will always be special.

The finish line

Hallucination 100 buckle and the Vibrams used in the race

Appendix

Finding Other Barefoot and Minimalist Shoe Runners

A few years ago, most barefoot runners lived a lonely existence. There were a handful of barefoot hot spots, but most of us toiled in obscurity. I ran barefoot for four years before I had the opportunity to run with another barefoot runner.

The rise in popularity of barefoot running has led to two major changes. Since there are more barefoot runners, there is now a greater likelihood you will encounter another. Also, many maintain a presence on the Internet, which can be a wonderful resource for learning. The Internet also provides an opportunity to meet people in your area.

In the fall of 2009, several other barefoot runners and I decided to help facilitate the meet-up process by forming the Barefoot Runners Society (thebarefootrunners.org/build2), a

national nonprofit organization with chapters spread around the county. Odds are good that a chapter exists in your area. If not, contact the BRS leadership and inquire about starting a local chapter.

THE BAREFOOT RUNNERS SOCIETY

The Barefoot Runners Society was born out of a strong desire to connect with others who share my passion for running barefoot. This connection is what binds us to one another and helps us to feel that we are not alone in this otherwise solitary experience. Forum discussions were nice, but I felt I needed more. Why just *talk about* running barefoot together? Why not *run* barefoot together? I knew that if I had this need, then surely others did, too. If you are a barefoot or minimalist runner, be sure to join the Barefoot Runners Society to take advantage of the many resources we offer at no charge. With their help and possibly yours, we will grow our crazy sport and, as Jason says, "change the running world one odd look at a time."

Tamara Gerken
Barefoot Runners Society president and founding member

Barefoot and Minimalist Shoe Runners and Supporters You Should Know

Abebe Bikila: Bikila won the 1960 Olympic marathon while running barefoot. The 1960 Olympic Games were sponsored by Adidas, and the shoes Bikila was given were ill-fitting. Since he trained barefoot, he made the decision to run the race without shoes.

Zola Budd Pieterse: Budd is a South African woman who held the 5,000 meter world record in the 1980s. At her peak, she trained and competed barefoot.

Katie Button-Swenson: Button-Swenson is a barefoot runner and Zumba dance instructor based in Rochester, Minn. Her blog can be found at barefootmamaslifeinanutshell .blogspot.com.

Krista Cavender: Cavender is a barefoot running blogger (nakedonsharppointystuff.blogspot.com) and graphic artist. Her well-known barefoot running shirt designs can be found at kmcreative.com.

Mark Cucuzzella, MD: Cucuzzella is a physician, ultra-runner, race director, and the owner of Two Rivers Treads (trtreads.org), a minimalist running store in West Virginia. He also spends considerable time educating runners about proper form.

Preston Curtis: Curtis is a longtime barefoot runner from the Boston area. His New England Barefoot Runners group (meetup.com/metro-boston-barefoot-runners) has been instrumental in promoting and supporting barefoot running. He is also one of the charter members of the Barefoot Runners Society.

Irene Davis, PhD, PT, FACSM: Davis is a professor of physical therapy at Harvard University. She investigates the relationships between the lower extremities, mechanics, and injury.

Tina Dubois: Dubois is a cohost of the *Living Barefoot* podcast and writes the *Toe Girl Tina's Barefoot Alternative Adventures* blog (toegirltina.blogspot.com). She is an accomplished barefoot running coach; her services are described at livingbarefoot.info/coaching.

John Durant: Durant is the founder of Barefoot Runners NYC and co-organizer of the popular New York City Barefoot Run. His blog can be found at hunter-gatherer.com.

Herb Elliott: Elliott, a barefoot runner, won the gold medal in the 1,500 meters at the 1960 Olympic Games. He also ran seventeen sub-four-minute miles. He was never defeated in a 1,500-meter or mile race.

Joseph Froncioni, MD: Froncioni is an orthopedic surgeon and runner. He wrote one of the most influential works of the modern barefoot running movement, described earlier in this book. The essay can be found on his blog, quickswood .com/my_weblog/2006/08/athletic_footwe.html.

Al Gauthier: Gauthier runs the Living Barefoot website (livingbarefoot.info). Living Barefoot exists to promote a barefoot lifestyle, which includes walking, running, and products associated with the lifestyle. He is also a cohost of the *Living Barefoot* podcast.

Tamara Gerken: Gerken created the *Runner's World* Barefoot Running forum, which proved to be a valuable meeting place to share ideas about barefoot running. She is also a founding member and the first president of the Barefoot Runners Society, the leading organization on all things related to barefoot running.

Scott Hadley, PhD, DPT: As a physical therapist, Hadley (hadleyclinic.com) is a pioneer in developing treatment procedures for all runners in general and barefoot runners in particular. He is also a leader in the study of stretch reflexes and running gait in barefoot runners.

Angela Hotz: Hotz writes the popular blog *Barefoot Angie Bee* (barefootangiebee.com). She routinely writes about her experiences as a barefoot runner and mother, and she provides a ton of tremendous product reviews. She is also an accomplished barefoot running coach.

Daniel Howell, PhD: Howell is an associate professor of biology at Liberty University. He is also the author of *The Barefoot Book* (drdanielhowell.com).

Pete Kemme: Kemme is the founder of Kemme Fitness

(kemmefitness.com) and is among the world leaders in developing unique functional fitness exercises and workouts.

Kate Kift: Kift is a well-known barefoot blogger and frequent contributor to online barefoot running communities. Her blog can be found at barefootkatiek.blogspot.com.

Anton Krupicka: Krupicka is a minimalist shoe elite ultramarathon runner known for his very high-mileage training and wins in the Miwok 100K Trail Race, the Leadville 100, and the Rocky Raccoon 100.

Pete Larson, PhD: Larson, a well-known blogger, routinely discusses the scientific merit of barefoot and minimalist shoe running on his popular website, Runblogger (runblogger.com).

Erwan Le Corre: Le Corre is the founder of the Natural Movement Coaching System, as featured on his website, MovNat (movnat.com).

Jessica Lee: Lee is a cofounder and the president of RunBare (runbare.com), a barefoot running school in Boulder, Colo. She is also a contributor to the book *Barefoot Running: How to Run Light and Free by Getting in Touch with the Earth*.

Daniel Lieberman, PhD: Lieberman, a professor of human evolutionary biology at Harvard University, has been conducting research on the impact forces and merits of barefoot versus shod running. His barefoot running site (barefoot running.fas.harvard.edu) is an excellent resource.

Caity McCardell: McCardell is best known for her blog, *Run Barefoot Girl* (runbarefootgirl.com). She routinely interviews luminaries from the barefoot and minimalist shoe community, with an added focus on women.

Ted McDonald: "Barefoot Ted's" most famous appearance came in Christopher McDougall's book *Born to Run*. Before that appearance, McDonald shared a great deal of experience through his website, barefooted.com. He was the other major influence on my early barefoot running adventures.

Christopher McDougall: McDougall is an author and

journalist. His excellent book *Born to Run* energized and publicized the barefoot running movement. Since the publication, McDougall has become an outspoken critic of the modern running shoe.

Justin Owings: Owings is the owner of Birthday Shoes (birthdayshoes.com), a site dedicated to minimalist shoes in general and Vibram FiveFingers in particular.

Victor Palma: Palma, a longtime barefoot runner, helped found the Barefoot Runners Society. He has been a tireless supporter of the barefoot running movement, including advocating barefoot running in the military.

Christian Peterson: Peterson is a barefoot runner and blogger best known as the Maple Grove Barefoot Guy. His popular blog, maplegrovebarefootguy.com, features shoe reviews, barefoot tips, and other assorted goodies. Despite his being a full seven inches taller than I, we're sometimes mistaken for twins.

Jesse Scott: Scott is an accomplished minimalist shoe runner from Muskegon, Mich. He has at least one ultramarathon win and was involved in a photo finish at the North Country fifty-mile trail run in Manistee, Mich., in 2010. Scott is also one of the founding members of the Hobby Joggas running club and a prolific blogger (jscott87.blogspot.com).

Todd Ragsdale: Ragsdale is a barefoot ultramarathon runner. In June 2010, he broke the Guinness World Record for farthest distance covered in twenty-four hours while barefoot.

Trisha Reeves: Reeves is a barefoot running blogger and frequent online community contributor. Her blog can be found at barefootmonologues.wordpress.com.

Steven Robbins, MD: Robbins is a prominent researcher on barefoot running. In 1987 he began publishing his research, which can be found at stevenrobbinsmd.com/home.

Shelly Robillard: Shelly is a long-distance barefoot and minimalist shoe runner and my lovely wife! She is known for

the work she does to inspire others to meet their greatest goals. Her blog can be found at shoelessshelbell.blogspot.com.

Vanessa Rodriguez: Rodriguez is a health journalist, holistic nutritionist, and ultrarunner. Her website can be found at vanessaruns.com.

Rick Roeber: "Barefoot Rick" is best known for his string of barefoot marathons. His ideas, disseminated through his website (barefootrunner.org), were a major influence on my early barefoot running experiences.

Alex Romero: The younger barefoot Romero brother has multiple sub-three-hour marathons to his credit, including a win in the Duke City Marathon.

Julian Romero: The elder barefoot Romero brother has also dominated marathons by posting sub-three-hour times repeatedly. He placed second in the Duke City Marathon.

Leif Rustvold: Rustvold is a barefoot and minimalist shoe ultramarathon runner. He has run a hundred-mile race in Vibram FiveFingers. His blog, *Distance Minimally* (distance minimally.com), documents his adventures.

Michael Sandler: Sandler is the author of the excellent book *Barefoot Running: How to Run Light and Free by Getting in Touch with the Earth*. He is also a barefoot running educator and cofounder of RunBare (runbare.com), a barefoot running school in Boulder, Colo.

Ken Bob Saxton: Saxton, widely considered to be the leader of the barefoot running movement, is the "resident guru" of the Barefoot Runners Society. His website, therunningbare foot.com, is considered must-read material. Most of my theories were developed from Saxton's teachings.

Robert Shackelford: "Shacky" is a longtime contributor to online forums and has written several excellent articles detailing methods to begin barefoot running. He is also an accomplished trail runner.

Shivnath Singh: Singh is often considered India's greatest

distance runner. He was also known for competing with only tape on his feet. In international competition, he won a gold medal and five silver medals.

Jason Spooner: Spooner is a barefoot runner best known for his high-mileage training. He routinely runs more than a hundred miles per week barefoot, with a personal best 155-mile week. He has also run a sub-three-hour barefoot marathon.

Josh Sutcliffe: Sutcliffe is an accomplished barefoot runner and blogger whose achievements include a sub-three-hour marathon. His blog can be found at barefootjosh.com.

Patrick Sweeney: Sweeney is a barefoot/minimalist runner from Manhattan Beach, Calif. He won the Palos Verdes Marathon in 2010 while wearing Vibram FiveFingers. He is also an accomplished ultramarathon runner.

James Webber: Webber is a barefoot runner from Kalamazoo, Mich. He routinely places at or near the top in every race he runs, making him one of the fastest barefoot runners in the United States. His accomplishments include a 2:46 marathon.

Chad Wilkerson: Wilkerson is a barefoot runner and English teacher. Among other things, he is dedicated to spreading information about the benefits of barefoot running. His blog can be found at unshodandunashamed.blogspot.com.

Nathaniel Wolfe: Wolfe is a barefoot runner and yoga and kung fu instructor, as well as a frequent contributor to online running communities. His blog can be found at shifting strands.blogspot.com.

Spread the Word!

After I began conducting clinics, I realized the idea of natural movement had the power to transform people's lives. I encountered people who were able to run after years of injury-induced inactivity. I met people who had found the intrinsic joy of exercise for the first time. I discovered people who had dramatically improved their quality of life by ending chronic pain caused by standing in cushioned, raised-heel shoes all day. This idea was revolutionary. I realized I had the power to make a positive dent in the universe.

Using this book, my blog, clinics, and my participation in various forums, I could reach a pretty big audience. Still, there was a limit to my reach. As a teacher, I had a restricted classroom. In an effort to spread the concept of barefoot running and natural movement to a larger audience, I started treating my "students" as potential teachers. Every person I influenced

had the power to take the ideas and spread them to their own students. This revelation was powerful. Since that epiphany, I've encouraged others to do what they can to disseminate the ideas. If you've read the book to this point, you're more than qualified to do so. Natural movement is a simple concept that can be taught by anyone. I would highly encourage *you* to help me change the world and spread these ideas. Here are a few methods my "students" have used to become "teachers."

Share ideas with friends. Peer-to-peer sharing of ideas has transformed barefoot running from a relatively obscure idea to something that is changing the very foundations of movement and exercise. One person tries it, has success, then shares the ideas with his or her friends. This grassroots sharing model is simple and amazingly effective. Not only does it allow your friends to learn these life-changing ideas; it gives you the opportunity to learn by teaching.

Start a blog. You don't have to be a trained writer to start your own blog. All you need is a unique perspective and a little extra time. Your journey to barefoot or minimalist shoe running has the power to inspire others like you. Blogging is an excellent way to reach that audience. Also, you may encounter issues and develop unique solutions, which can help the entire community.

Start a group. Humans are social animals. We enjoy the sense of belonging that comes with group membership. Sharing these ideas in a group setting can be extremely effective. Not only do you have a ready-made system of mutual support, but new ideas can be developed and tested. Groups can be formed within running clubs, at a place of employment, at a church, or just with a few close friends.

The most effective groups start with a variety of personality types. Some people like to research all they can about barefoot running. Others like to use their social connections to bring new people together or promote the group using local

media. Still others like to use their persuasive abilities to convince new people of the merits of these ideas. The best groups bring all three of these personality types together. If you start a group, actively recruit members who will fill these roles.

Become a coach or hold a clinic. It is surprisingly easy to teach others once you learn the basic techniques of barefoot running. Teaching requires three skills: the ability to run barefoot yourself, an understanding of the basic theory behind barefoot running, and the ability to communicate with the people you're teaching. If you do not feel comfortable doing it alone, clinics can be conducted by a group. Also consider volunteering as a coach for your local schools. Teaching good running form at an early age can be invaluable.

Patronize local running stores that support minimalist shoe running. Your local running stores are the foundation of the running community. They serve as a hub for everything associated with the sport. Many local running stores are beginning to recognize the value of minimalist shoes. If you have a supportive store in your area, frequent it for all your purchases. Tell its employees you're happy the store supports the minimalist movement.

If your local running store does not support the ideas behind minimalism, ask if it can begin carrying your favorite models. Have your friends do the same. Nothing will change management's minds faster than consumer demand.

Barefoot Resources

- Barefoot Running University (barefootrunninguniversity .com): My barefoot and ultramarathon site.
- *Shoeless Shell Bell* (shoelessshelbell.blogspot.com): Shelly shares her journey through life, including stories about parenting, running, and her journey toward self-improvement.
- *Jason's Barefoot Adventure* (robillardadventures.com): The documentation of my family's adventures, including our long-term travel around the United States in an RV
- Barefoot Runners Society (thebarefootrunners.org/build2)
- Natural Running Center (naturalrunningcenter.com)
- The Running Barefoot (therunningbarefoot.com): Ken Bob Saxton's website
- *Runner's World* Barefoot Running forum (runnersworld .com/community/forums/index.jsp)
- Birthday Shoes (birthdayshoes.com)

- Barefoot Rick Roeber's website (barefootrunner.org)
- RunBare (runbare.com)
- Yahoo Groups: The Running Barefoot (sports.groups.yahoo.com/group/runningbarefoot)
- Google Groups: Minimalist Runner—Barefoot, Sandals, Shoes (groups.google.com/group/huaraches): Barefoot Ted's group for huaraches, Mexican sandals used for running
- Barefoot Ted's Adventures (barefootted.com)
- Toe Salad (toesalad.com)
- Evolution Running (evolutionrunning.com)
- Good Form Running (goodformrunning.com)
- Wikipedia: Barefoot running (en.wikipedia.org/wiki/Barefoot_running)
- ChiRunning (chirunning.com/shop/home.php)

Glossary

barefoot running: Running with nothing on your feet

cadence: How many times each foot touches the ground, usually measured per minute. Barefoot cadence is usually greater than shod cadence. Most barefoot coaches recommend a cadence of at least 180.

fartlek run: Running with varying levels of intensity, ranging from walking to sprinting

long run: A continuous run over a long distance at a slow speed. Used to build endurance.

minimalist running: Running in shoes that provide limited or no support and only minimal protection, with the heel at the same level as the forefoot. Examples of minimalist shoes include Vibram FiveFingers, Feelmax shoes, aqua socks (or beach shoes), and some racing flats. Minimalist running is

often an acceptable second choice to barefoot running from an injury-prevention standpoint.

overstriding: The tendency of a runner's foot to make contact in front of his or her center of gravity, resulting in a "braking" action. Common among heel strikers. Leads to decreased running efficiency and may be a major cause of running injuries.

reduced shoe running: Running in shoes that provide less support and less cushioning than traditional running shoes but still cause many of the same problems as traditional running shoes. The heel of reduced running shoes is slightly higher than the forefoot area. Nike Frees and most racing flats are examples of reduced running shoes.

speed work: Fast-paced running, above normal running pace. Usually involves running repeats over a given distance (run fast for a short time, recover by walking or stopping, then repeat).

stride length: Distance between successive points where one foot touches the ground. Barefoot stride length is typically shorter than shod stride length.

tempo run: Fast-paced run of intermediate length, in which runner speeds up as the run progresses, until 10K pace (or running fast enough where conversations are difficult to maintain) is reached

too much too soon (TMTS): The tendency of a new barefoot runner to run farther or faster than his or her body is capable of. Often results in injuries.

top-of-the-foot pain (TOFP): Pain experienced along the top of the foot. Although some degree of mild, dull soreness is common as feet adapt to barefoot or minimalist running, strong TOFP usually indicates the new barefoot runner is doing too much too soon.

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